The Yuquot Project
Volume 3

Glassware Excavated at Yuquot, British Columbia

Glass Beads from Yuquot, British Columbia

Clay Tobacco-Pipes from Yuquot, British Columbia

Ceramics from Yuquot, British Columbia

Mexican Sherds Recovered from the Archaeological Excavations at Yuquot, British Columbia

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William J. Folan and John Dewhirst
Project Editors

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Phil Weigand, Sue Ward and Garman Harbottle

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Glassware Excavated at Yuquot, British Columbia

Olive Jones

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Abstract

Archaeological investigations in the Nootkan village of Yuquot yielded a small collection of glassware. It consists of tableware; window glass; mirrors; lighting fixtures; marbles; wine, spirits, and beer bottles; carbonated beverage bottles; perfume and cosmetic containers; druggists' bottles; food preservation jars; and various unidentified objects. Most of the approximately 200 objects recovered were fragmentary. There were three examples of 18th-century glass and the remainder dates from about 1870 to the present. Dating of the glass was based on the manufacturing date, considering technological advances in the glass industry and periods of popularity for certain products. The identified pressed glass patterns and containers were manufactured in Canada and the United States. No European glassware other than the 18th-century material was identified.

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Introduction

In 1966 W.J. Folan, then of the National Historic Parks and Sites Branch, directed archaeological excavations at Yuquot, a Nootka Indian village on the west coast of Vancouver Island. A large trench was opened in the Yuquot midden, and the site of a late 18th-century Spanish gun battery on nearby San Miguel Island was extensively tested (Dewhirst 1980). All the glass artifacts studied came from the Yuquot midden, as the San Miguel excavations yielded only a few fragments.

The glass was examined to help date stratigraphic units and to determine, if possible, the function of individual objects. It was hoped that examples of glass from the Spanish period of occupation would be present.

In this report, the glass is arranged by its obvious or presumed use. The first six chapters following the introduction discuss tableware, window glass, mirrors, lighting fixtures, miscellaneous, and unidentified glassware. The following seven chapters discuss containers: liquor (wine, spirits, and beer) bottles, carbonated beverage bottles, perfume and cosmetic bottles, druggists' bottles, food preservation jars, and miscellaneous unidentified containers. The general shapes, manufacturing techniques, colours, dates, and country of origin are discussed in these categories. Measurements are given where they are meaningful. Undiagnostic fragments are ignored although unidentifiable fragments of interest are described and illustrated. Where possible, a pictorial reconstruction of an object or pattern is attempted. Colour is defined by the Nickerson Color Fan code (Munsell Color Company 1957). Dating of objects is based on their manufacturing date, considering technological advances and period of popularity.

European Contact with Yuquot

The first European contact with the Nootkans was a brief encounter in 1774 with the Spanish explorer Juan Pérez near the entrance to Nootka Sound. The next contact came in the spring of 1778 when Captain James Cook anchored in Nootka Sound to replenish provisions and to repair his ships. The Cook expedition visited Yuquot and traded extensively with the Yuquot Nootkans. On their return to England, Cook's crews realized large profits in Canton from trading sea otter skins obtained at Nootka Sound. In 1785 the first of many British and American traders visited Yuquot. The maritime fur trade threatened Spanish interests in the North Pacific and motivated Spain to establish a military post at Yuquot for a short time in 1789. The post was re-established in 1790 and maintained until 1795. The near extinction of sea otters in the Nootka Sound area by the early 1790s made Yuquot (or Nootka, as it was called by Europeans) primarily a provisioning stop for traders en route between British and American ports, China, northern areas of the Northwest Coast, and later, Hawaii. In 1803 the Yuquot Nootkans seized an

American trading ship, the *Boston,* and direct contact with Europeans became very sporadic until the late 19th century.

The settlement and economic development of British Columbia in the late 19th century resulted in frequent European-Nootkan contacts and set in motion acculturative processes. Roman Catholic missionaries became active on the west coast of Vancouver Island after 1875. Nootkans were hired as seal hunters on schooners that went to the Bering Sea and to California. The dogfish oil fishery, and subsequently the commercial salmon, herring, and halibut fisheries, attracted many Nootkans. A general store was built in Yuquot about 1882, and a Roman Catholic church and rectory in 1889. From the 1890s until the 1950s the commercial fishing industry provided a primary economic base for the Yuquot Nootkans. Following the shut-downs of coastal canneries in the early 1950s, most Nootkans eventually moved from Yuquot to seek employment in Gold River, Port Alberni, and Victoria. Today only a few families live at Yuquot.

Tableware

Tableware is a general term used to describe items that are used during the serving and consumption of food and drink. Glassware of this kind is represented at Yuquot by tumblers, stemware, lids from covered dishes, pitchers, bowls, and plates.

All the tableware from the site except a tumbler and a stemware foot appears to have been pressed. This process was developed on a large scale by the New England Glass Company of Sandwich, Massachusetts, about 1827 (Scoville 1948: 18). Because thousands of pressed glass patterns have been produced since then, many named patterns have no pictorial record. Most of the fragments recovered are so small that only a portion of any pattern is present, and therefore attempts to identify the patterns on the glassware from Yuquot were rarely successful. Dating and attribution to any one factory can also be difficult because popular patterns were often reissued or copied by other companies.

Drinking Glasses

The five identifiable examples of drinking glasses from the site consist of two stemware fragments and three tumbler fragments.

The first stemware fragment (1T1J1-4) is a complete hexagonal foot (Fig. 1a, b). From corner to corner it measures 69 mm and from flat side to flat side it measures 60 mm. The upper surface of the foot consists of six panels delineated by faint ridges. At the foot rim the panels are 35 mm wide, but they narrow to 9.4 mm at the base of the stem. Two mould marks on opposite sides of the foot are disguised as two of the ridges. The foot rim itself is flat with bevels 2 mm wide on both the upper and lower edges. The two mould marks extend from the base of the stem to the upper bevel. There are no other obvious mould marks although the whole foot has been pressed. The basal surface of the foot is completely flat with irregular ripples. A faint purplish cast (5P) in the glass indicates that the foot was manufactured before the end of World War I (Hunt 1959: 34; Toulouse 1969a: 534).

The purple tint in the glass is caused by solarization and because it occurs frequently in the glass from Yuquot a brief explanation of the process is included here. The basic glass formula is sand, soda or potash, and lime. Iron, which causes a green colour in glass, is always present as an impurity in the sand. To mask this colour and to produce clear glass, decolourants such as manganese dioxide and silenium are added to the glass batch. When the manganese-iron combination is exposed to sunlight for a period of time the glass takes on an amethyst, or purple, tint (Toulouse 1969a: 534). The use of manganese dioxide as a decolourizer was seriously curtailed in North America and Britain during World War I as it had been imported from Germany. Other decolourants such as Canadian silenium, which may solarize to a smokey

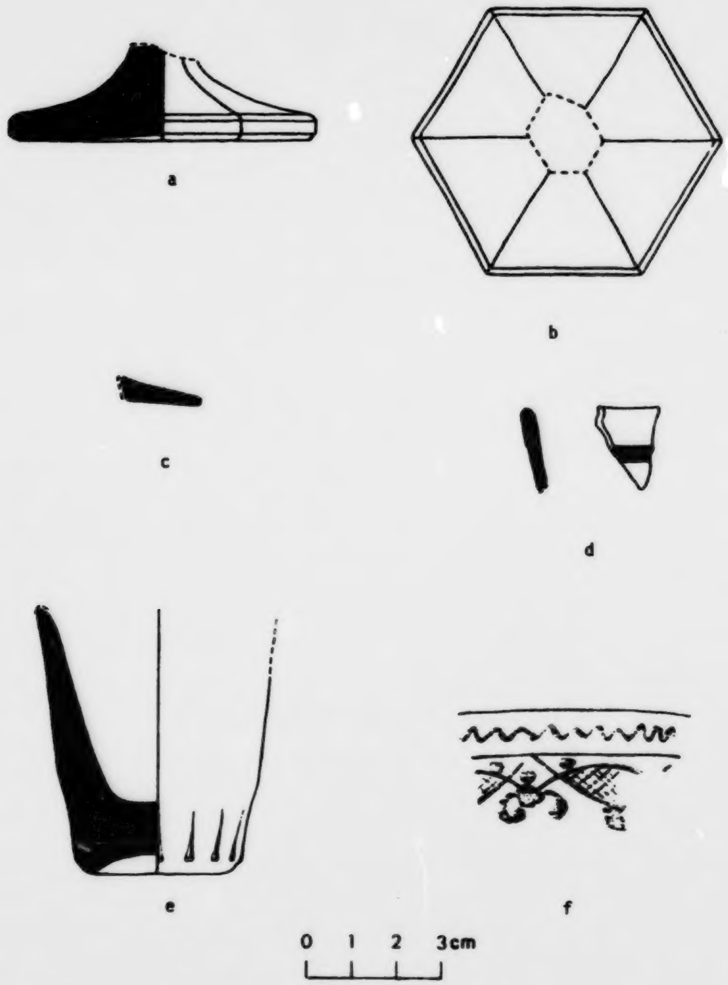


Fig. 1. Drinking glasses: a, cross section and profile of a hexagonal stemware foot, 1T1J1-4; b, top view of a hexagonal stemware foot, 1T1J1-4; c, cross section of a stemware foot, 1T1M1-57; d, cross section and plan view of a pressed glass tumbler rim, 1T1X2-83; e, cross section and profile of a pressed glass tumbler, 1T1X2-58; f, plan view of an engraved tumbler rim fragment, 1T3C4B-1.

amber or greyish tint, were substituted and continued to be used for technical reasons (Toulouse 1969a: 534).

The second stemware fragment (1T1M1-57, Fig. 1c) is a rounded foot rim about 50 mm in diameter. The top surface slopes upward toward the stem; the basal surface is slightly concave toward the centre but flattens near the rim. Both surfaces are slightly rippled in an encircling fashion. The foot does not appear to have been pressed. The fragment cannot be dated.

The first tumbler (Fig. 1d) is represented by three rim fragments (1T1X2-83) which appear to be from a container for cheese or other semi-permanent foods that was intended for later use as a tumbler (Stevens 1967: 154). The top of the rim is 3 mm thick. On its inside surface is a slight step outward which is probably a mould mark. A series of short (3 mm high), parallel, faint, vertically oriented lines begins 9 mm below the top of the rim. A similar object is illustrated in a Dominion Glass Company catalogue (Stevens 1967: 154). The Dominion Glass Company was incorporated after 1913.

The second tumbler (1T1X2-58) has a series of raised, very narrow, trianguloid figures at the base of the body. The figures are 11 mm high, 3 mm wide at the base, and set 4 mm apart (Fig. 1e). The body profile is straight near the base, expands outward slightly 13 mm above the base, and then recurves to become straight. The base, 35 mm in diameter, has a concave basal surface. The thickness of the glass in the basal area and the outcurve of the body has a magnifying effect. This may have been a bar glass in which case the optical illusion would make it appear as if there were more liquid in the glass than there actually was. This tumbler was probably pressed. The purplish tint (5P) in the glass suggests that the tumbler was made before the end of World War I.

The third tumbler is one of the unpressed tableware objects. It consists of a number of fragments (1T1X1-53, 1T3C4B-1, 1T2D2B-1, 1T2C4-184, and 1T2C5-553X) which probably represent one vessel. The glass is clear, thin (about 1.0 mm), and all of the fragments bear an intaglio wheel-engraved design near the rim (Fig. 1f). The lower part of the tumbler appears to have been undecorated. When the glass was tested for the presence of lead by using hydroflouric acid and ammonium sulphide (Ellville 1951: 254), the result was negative. This tumbler is not, therefore, made of potash-lead glass.

Although the tumbler's origin cannot be ascertained it is probably one of the few examples of 18th-century glass found at the site. Engraving was particularly popular during the 18th century and although it is traditionally considered to be Dutch or German in influence if not in fact (Frothingham 1941: 61, 63), it was produced all over western Europe and in the American colonies. Hunter (1950: figs. 114-116) illustrates three white flint flip glasses attributed to Henry Steigel of Pennsylvania with the same design elements that are found on the Yuquot fragments. Operating his glass works between 1763 and 1774, Steigel hired his workers in England and Germany and imitated the European styles so successfully that products from his factories are indistinguishable from those produced in Europe (McKearin and McKearin 1948: 85). The tumblers could have been brought to the site by any of the Europeans or Americans who were on the site during the late 18th century.

Covers

Three examples of covers are present in this sample. The first cover (1T1L3B-26 and 1T1L1C-34) appears to be from a large, covered bowl or compote of clear glass. At the rim is a horizontal, everted support and a vertical downward-projecting collar, or cover ring (Fig. 2a), with an outer diameter of about 160 mm. The diameter of the lid including the support is about 190 mm. The cover is pressed and there are two mould lines, one on the inner edge of the cover ring, and the other along the lower outer edge of the support.

The pattern on the inner surface of the cover is called "Nova Scotia Starflower" (Fig. 2b). It was produced by the Nova Scotia Glass Company (extant from 1881 to 1890) of Trenton, Nova Scotia, which disposed of its assets to the Diamond Glass Company of Montreal in 1890. In 1892 the Trenton glassworks were closed and the moulds were sent to Montreal (MacLaren 1968: 14, 25, 30) where the Diamond Glass Company seems to have continued production of the pattern. Spence and Spence (1966: 45) describe the pattern as "found from coast to coast in Canada in every form." Its presence in this site certainly supports the "coast to coast" claim. The earliest possible production for the pattern, therefore, appears to be 1881, but no terminal date has been established.

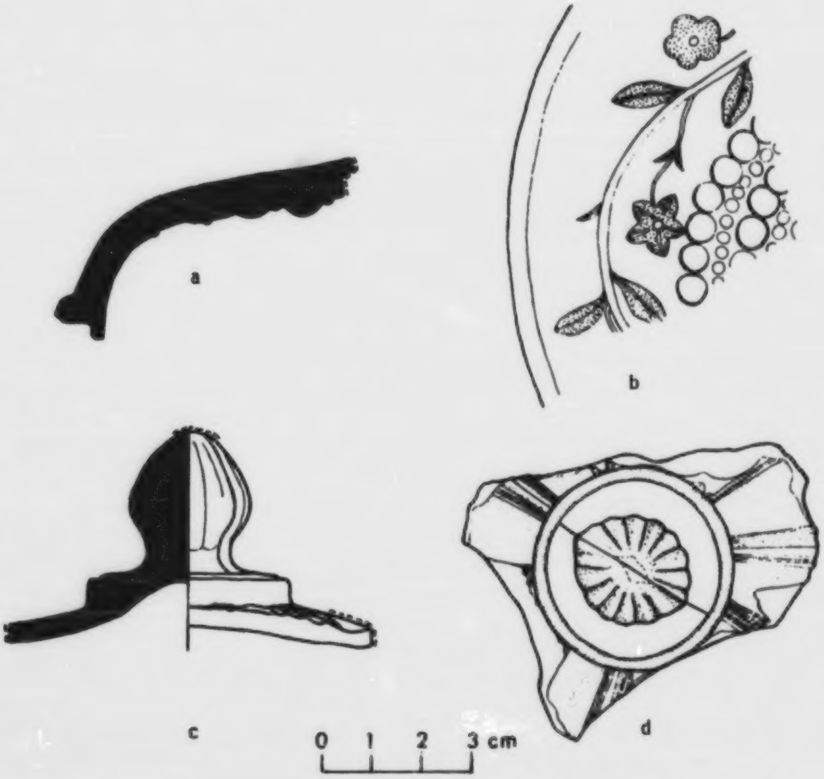


Fig. 2. Covers: a, cross section of a pressed glass cover, 1T1L3B-26; b, basal view of a pressed glass cover showing Nova Scotia Starflower pattern, 1T1L3B-26; c, cross section and profile of a pressed glass cover, 1T1X1-37; d, top view of a pressed glass cover, 1T1X1-37.

The second pressed cover (1T1X1-37) is of transparent pale green-yellow (5GY) glass. At the centre of the lid on its upper surface is a raised circular platform 41 mm in diameter and 6 mm high (Fig. 2c) with straight sides. The top surface of the platform has a slight step near its edge from which the surface slopes upward and then recurves to form a solid acorn-shaped knob. The knob is 29 mm high, 25 by 24 mm in diameter, and has vertical ribbing on its surface. The stem diameter is 15 by 18 mm. The remaining upper surface of the lid bears a sunray motif which radiates from the raised central area. The ray motif consists of ten sets of three adjacent ridges separated from each other by convex areas of smooth glass (Fig. 2d). A vertical mould mark which is not apparent anywhere else extends from the upper edge of the central raised platform up and over the knob. The inner surface is completely smooth. No identification or date for this particular piece could be found other than the beginning date for pressing.

The third cover (1T1G6-29) is of clear glass, appears to be shallow, and has a plain rim 4 mm thick and about 130 mm in diameter (Fig. 3a). There are two sharp mould lines, one on the interior edge and one on the exterior edge of the rim.

The pattern consists of an undecorated area next to the rim followed by a double row of raised diamonds against a circular stippled background. The design is a portion of "Stippled Forget-me-not" (Lee 1931: 383-5). This pattern was produced by Bryce, McKee and Company of Pittsburg, Pennsylvania, about 1880 (Revi 1964: 90) and by the Model Flint Glass Company of New Albany, Indiana, after 1891 (Revi 1964: 90, 243). Figure 3c is a reconstruction of the pattern.

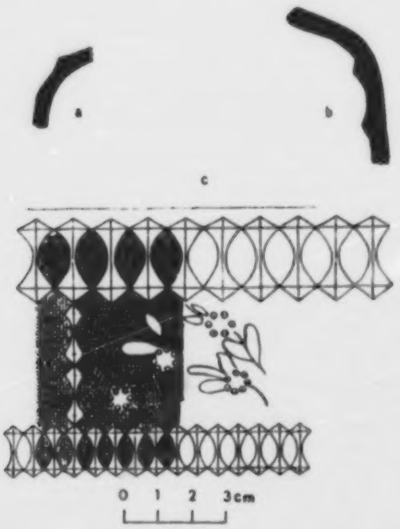


Fig. 3. Tableware in Stippled Forget-me-not pattern: a, cross section of a pressed glass cover in the Stippled Forget-me-not pattern, 1T1G6-29; b, cross section of a pressed glass pitcher in the Stippled Forget-me-not pattern, 1T1X1-58; c, reconstruction of the Stippled Forget-me-not pattern based on Lee (1931: Plate 128).

Pitcher

There is only one example of a pitcher from the site. The pitcher fragment (1T1X1-58) consists of a part of the pouring lip (Fig. 3b). The rim itself is "flattened-round," but does not have any mould marks although the vessel was pressed. The pattern, "Stippled Forget-me-not," is the same as that of the third cover described above. As both sugar bowls and creamers were produced in this pattern, it is possible that these two items are from a cream and sugar set.

Bowls

In addition to the bowl cover fragments discussed above, four other bowls are represented at the site. The first bowl (1T1G6-26) is shallow, footed, and of clear glass. The foot protrudes about 4 mm below the curve of the bowl and has a diameter of about 96 mm (Fig. 4a).

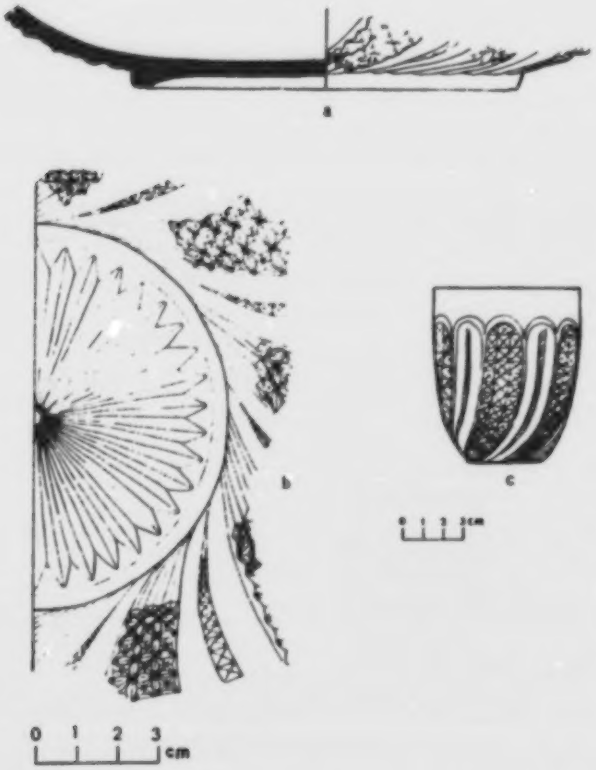


Fig. 4. Bowl in Feather pattern: a, cross section and profile of a pressed glass bowl in the Feather pattern, 1T1G6-26; b, basal view of a pressed glass bowl in the Feather pattern, 1T1G6-26; c, reconstruction of a stemware bowl in the Feather pattern from Metz 1964 (p. 140, No. 1568).

A mould line encircles the base about 4 mm inside the edge of the foot. Lack of visible mould lines on the body indicate that this may have been a block-mould piece.

On the foot (Fig. 4b) is an impressed sunburst pattern and on the body is a swirled pattern known variously as "Feather," "Swirl and Feather," "Doric," or "Feather and Quill" (Lee 1944: 176). The rayed bases, of which this is an example, are of poorer quality glass than those with a medallion in the base. Listed under "Doric" in Revi (1964: 238), this pattern (Fig. 4c) is dated about 1896 and was made by McKee and Brothers of Jeannette, Pennsylvania.

The second bowl (1T2G6-28) is a bell-shaped sugar bowl in clear glass (Fig. 5a). An inner ledge near the top of the bowl suggests that it was probably covered. The design consists of convex panels extending from the top of the rim to the base of the bowl except for a stippled band 53 mm wide in the centre of the body. The panels are 12 mm wide at the top of the bowl and form a scalloped rim 108 mm in diameter. The stippled band begins 17 mm below the rim and its edges are also scalloped. The stipples are formed by slightly overlapping circles

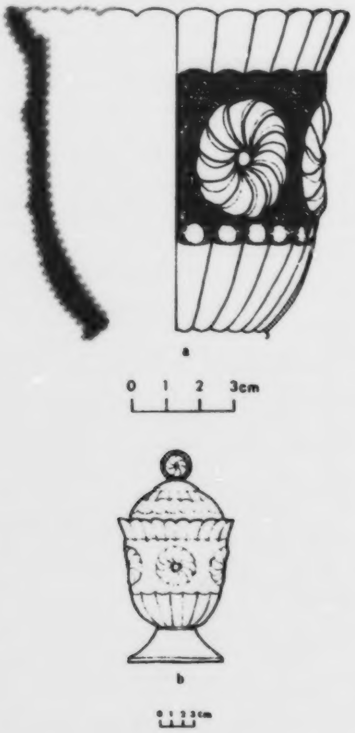


Fig. 5. Bowl in Roman Rosette pattern: a, cross section and profile of a pressed glass sugar bowl in the Roman Rosette pattern, 1T2G6-28; b, reconstruction of the bowl based on Lee (1931: Plate 157).

1.0 mm in diameter. Within the stippled band are six stylized flowers the centres of which are 45 mm apart. The flowers are 38 mm in diameter and are formed by crescents spiralling in a clockwise direction. At the centre of each flower is a pointed dome 5 mm in diameter. Panels below the stippled band end at a ridge that encircles the base of the bowl immediately above the missing base.

A horizontal mould line encircles the top of the scalloped rim of the bowl. From this line two extant vertical mould lines extend down the bowl between the flowers. As there are two flowers between each of these mould lines, the body of the bowl was probably made in a three-piece mould. A mould line also encircles the inside edge of the ledge that supports the cover. Height of the bowl from the rim to the bottom of the panelling is 99 mm.

The pattern is identified as "Roman Rosette" (Lee 1931: Plate 157) and the vessel reconstruction in Fig. 5b is taken from this plate. Originally the pattern was issued from about 1875 to 1885 by Bryce, McKee and Company of Pittsburg (Revi 1964: 89), but was reissued by the United States Glass Company as pattern "No. 15030" in 1892 and 1898. This glass company was formed by a merger of 18 glass factories in Pennsylvania, Ohio, and West Virginia.

A foot fragment (Fig. 6a), probably from a large bowl or compote, represents the third bowl (1T1X2-56). The foot is large (about 130 mm in diameter) of exceptionally thick glass (8-10 mm) with a purple tint

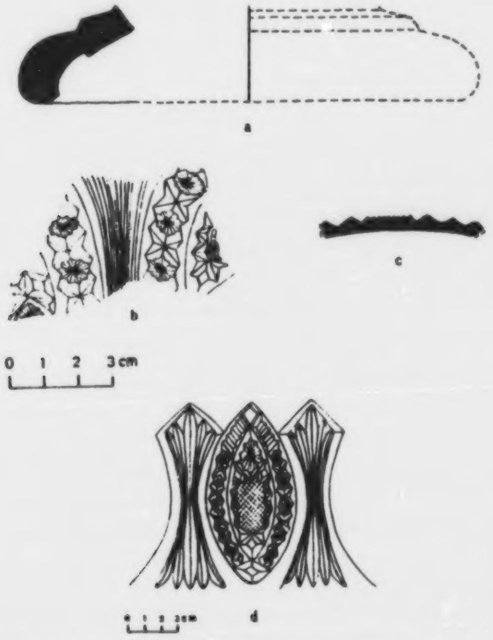


Fig. 6. Tableware: a, cross section and profile of a pressed glass bowl foot, 1T1X2-56; b, plan view of a pressed glass bowl in the No. 230 pattern, 1T1K2A-8; c, cross section of a pressed glass bowl in the No. 230 pattern, 1T1K2A-8; d, reconstruction of the No. 230 pattern based on Stevens (1967: 171).

(5P). A horizontal mould mark encircles the foot on its external surface 9 mm above the foot's slightly scuffed resting point. Although this object cannot be proven to be a foot, the thickness of the glass, particularly in the rim area, and the scuffing suggest that it was more likely to be a foot than a lid. The purple colour of the glass suggests that the foot was manufactured sometime before the end of World War I.

The fourth bowl (1T1K2A-8) is represented by two fragments of clear glass. The fragments have only a slight horizontal and vertical curvature which indicates that this was probably a very shallow bowl (Fig. 6b, c). The pattern consists of an opening fan outlined on either side by a row of impressed daisies alternating with impressed Xs. The vessel was probably reheated to restore brilliance to the pressed surface as the edges of the pattern are fairly diffuse.

The pattern has been identified as "No. 230" of the Jefferson Glass Company that was in business in Toronto from 1912 to 1925 (Stevens 1967: 171). A reconstruction of the pattern can be seen in Fig. 6d.

Plates

Four fragments of pressed glass appear to be plate rim fragments. They are of a coloured translucent glass that became popular in the late 1800s and is still being produced. This "opaque" glassware appeared in sets designed as substitutes for other, more traditional tableware materials (Gaines 1964: 30). Three of the fragments have parallel ribbing on the upper surface at right angles to the rim. The fourth fragment is decorated by colour gradations instead of embossing.

The first fragment (1T1J1-14) is pale milky blue (2.5PB). The ribbing extends to the rim and occurs in the following pattern: three ribs 3 mm wide, then one rib 5 mm wide, then three ribs 3 mm wide (Fig. 7a). The total width of the pattern is 20 mm. On either side of

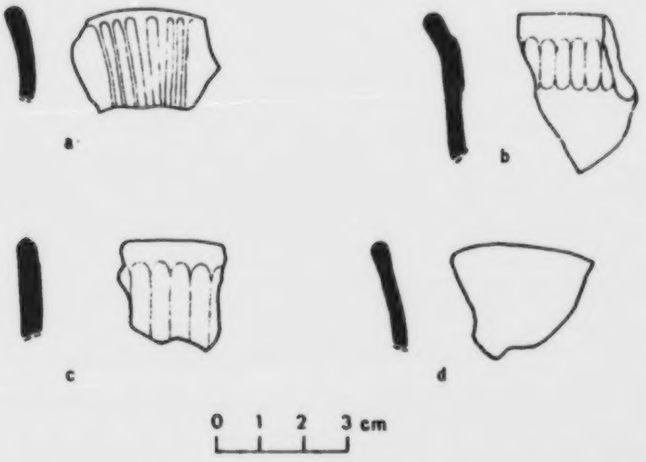


Fig. 7. Plates: cross section and top view of pressed glass plate rims. a, 1T1J1-14; b, 1T2J1-6; c, 1T2K1-2; d, 1T2G5-29.

the ribbing pattern is an undecorated area. The fragment is wave-worn and rust-stained.

The second fragment (1T2J1-6) is pale green (2.5G) and the core of the glass is closer to white than the surfaces. The ribbing is continuous, 12 mm long and 3 mm wide, and begins about 6 mm from the rim (Fig. 7b).

The third fragment (1T2K1-2) is pale green (2.5G) and again the core tends to be milkier than the surfaces. The ribbing is continuous, 4.5 mm wide, but no lengthwise measurement is possible. It begins about 5 mm from the rim. The undecorated basal surface is almost flat (Fig. 7c).

The fourth rim fragment (1T2G5-29) is of transparent but hazy blue (5B) glass which becomes translucent toward the rim. It does not have ribbing (Fig. 7d).

Wind[illegible] Glass

The window glass found in this site varies in thickness from 1.2 to 3.1 mm and the glass colour ranges from 7.5B, 2.5B, and 10BG to 2.5G, 7.5GY, and 2.5GY. Included in this may be fragments of flat-sided vessels that are indistinguishable from pane glass.

There are three examples of decorative window glass. The first fragment (1T1M1-43) is 2 mm thick and is deep purple-blue (7.5PB). It is completely and uniformly flat with a smooth undisturbed surface and no internal imperfections.

The second example (1T1M1-44 and 1T2M1-22) is 2.2 mm thick and consists of clear glass flashed on both surfaces with an extremely thin layer of dark red (5R) glass. Because certain colours are expensive to make in glass, "flashing" the colour onto a clear body was a standard way of economizing. Red was one of the commonest colours to be flashed. Also, some colours are so deep that a thin layer of glass was all that was needed to produce a rich glowing colour. If the layer was too thick the glass would become virtually opaque.

The third example (1T2K1-1) may possibly be from a flat-sided vessel. It is pale green-yellow (7.5GY) and varies from 3.3 to 4.7 mm thick. The fragment is completely flat on one side and on the other has an embossed design consisting of swirled leaf-like designs above a stippled background. Cast and rolled glass with a more or less elaborate ornamental pattern was available in 1923 from the Pittsburg Plate Glass Company (1923: 128, 132, 136), in 1906 from the J.H. Ashdown Hardware Company (1906: 1336) of Winnipeg, and in the 1830s from Pittsburg and Boston (Lee 1931: 414). This kind of glass was used to transmit light without visibility.

The presence of these fragments on this site is difficult to explain. Some window glass was used in the late 18th century although Nootkan houses were designed to be partially dismantled and reused at other sites. By 1893 most of the houses were of permanent construction and the Nootkans, some of whom were then employed on sealing ships, could have purchased coloured window glass. There were apparently no coloured panes in the first Roman Catholic church built at the village in 1889. The coloured and decorated fragment would more likely have been used in a commercial establishment such as a store than in a private home.

Mirrors

Fragments of three mirrors are present in the glass sample from Yuquot. The first example (1T2K1-12) is 2.8 mm thick with a faint blue-green (5BG) tint to the glass. Silver adheres to one surface and is covered by a gold-coloured coating. The second example (1T2J1-1) is 2.2 mm thick with a faint green tinge (2.5G). Silver adheres to one surface and is covered with a reddish-brown substance. The third example (1T1X1-39) is 6 mm thick with faintly tinted glass (2.5G). One fragment bears a rounded groove on its reflecting surface that runs parallel to the mirror edge. The silver backing is in the groove as well as covering the rest of the surface and this in turn is covered by a brownish-red coating. The edge of the mirror appears to be curved and bears a tiny bevel on its upper surface.

Mr. Bernard Hamelin, former Assistant Conservator, National Historic Parks and Sites Branch, tested the reflecting surfaces of the mirrors. He applied an orange solution of potassium diochromate containing a small quantity of sulphuric acid to a clean reflecting surface which in the presence of silver causes microscopic needle-like purple crystals to appear. As the tests were positive he concluded that the mirrors were backed with silver. The coatings were not analysed. According to the Pittsburg Plate Glass Company (1923: 56), using silver to back mirrors began about 1865. These mirrors must, therefore, have been manufactured after that date.

Lighting Fixtures

All the lighting fixtures from the site were parts of fuel-burning lamps, which is hardly surprising as electricity was not introduced at Yuquot until the 1950s. Lamp chimneys, a lamp font, and lamp stems were found during the excavation. An examination of the metal from all the lots containing lamp fragments revealed only one lot, 1T1L2, with any metal lamp parts. This lot contained part of a kerosene burner which was too fragmentary to be positively dated.

Lamp Chimneys

Glass lamp chimneys came into common usage after the introduction of kerosene lamps in the late 1850s (Russell 1968: 182; Davis 1949: 87). Sometime between 1870 (Davis 1949: 155) and 1885 (Russell 1968: 225, 283) the ornamented upper rim often found on lamp chimneys was introduced. Of the six different styles of chimneys found on the site, three have ornamented upper rims. The other three are plain, but these fragments may be from the lower rim.

The first style is represented by the upper rim fragments of two clear glass chimneys (1T2G6-27 and 1T3A1-49). The rims, about 70 mm in diameter, are decorated in the "pearl" finish (Stevens 1967: 16) which consists of a row of truncated ovate beading that gives the rim a serrated edge (Fig. 8a). The chimney flares outward from a constriction 33 mm below the rim. The example in Stevens (1967: 16) was manufactured in Hamilton about 1890.

The second style, represented by one fragment (1T2L2-3), also has a row of truncated ovate beading along the upper rim; however, in this case the top of the rim is flat (Fig. 8b). The fragment appears to be from a cylindrical straight-sided chimney which turns outward about 22 mm from the rim. The pale, transparent, amber glass (7.5Y) is badly scuffed and wave-worn.

The third style, represented by one fragment of clear glass (1T1M1-58), is "crimped," the edge of the rim bearing an alternating series of rounded nodes connected by V-shaped depressions (Fig. 8c). The fragment is too small to estimate the diameter. Davis (1949: 155) states that the crimped-top lamp chimney was introduced after 1870.

The fourth style, represented by one example of clear glass (1T2G5-32 and 1T2G4A-24), has an undecorated rim 1.5 mm thick and about 70 mm in diameter. The rim is cylindrical and has a straight profile to a point 35 mm below the edge of the rim where the body begins to curve gradually outward (Fig. 8d). If this fragment is from the part of the chimney that fits into the chimney prongs, its straight profile indicates a post-1870 manufacturing date (Russell 1968: 211, 225).

The fifth style, represented by one fragment of clear glass (1T2E3-27), has a roughly ground interior rim edge. The external rim edge bears a rounded lip 4 mm high (Fig. 8e). Extending downward from

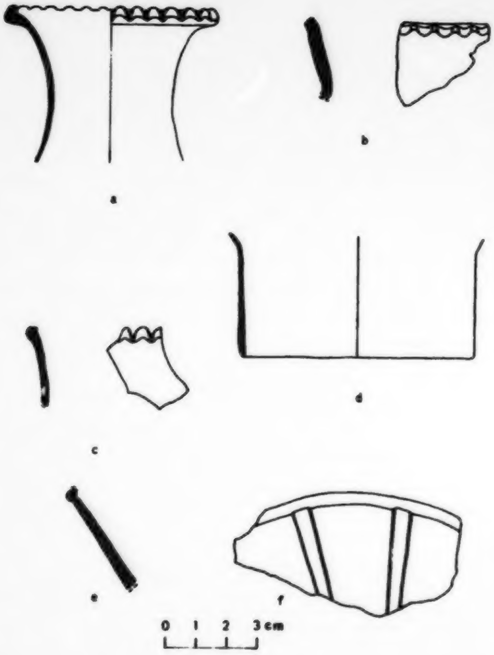


Fig. 8. Lamp chimneys: a, cross section and profile of a "pearl" lamp chimney rim, 1T2G6-27; b, cross section and plan view of a lamp chimney rim, 1T2L2-3; c, cross section and plan view of a "crimped" lamp chimney rim, 1T1M1-58; d, cross section and profile of a lamp chimney base, 1T2G4A-24; e, cross section of a lamp chimney rim, 1T2E3-27; f, plan view of a lamp chimney rim, 1T2E3-27.

this lip are vertical flat ribs with bevelled edges, 6 mm wide and 28 mm apart at the rim. As the body slants inward, these ribs come closer together (Fig. 8f). On the interior surface the glass follows the contours of the outer surface, as is common in mould-blown glassware. No date could be established for this chimney.

The sixth style, represented by one example (1T1G6-1829), has a flat roughly ground lower rim about 75 mm in diameter and 5 mm high. Above the rim the chimney swells outward then tapers toward the top rim, but about 152 mm from the bottom rim it flares sharply into a rounded shoulder which leads to the upper rim (Fig. 9). The two vertical mould lines begin at the ground surface of the lower rim and end at a horizontal mould line encircling the outer edge of the upper rim. A second horizontal mould line encircles the inner edge of the upper rim. The glass is transparent but has a faint purplish tinge suggesting that the chimney was manufactured before the end of World War I. Examples in Stevens (1967: 133) and the J.H. Ashdown hardware catalogue (1906: 846) similar to this style suggest that this chimney was used for a lantern rather than a lamp.

The following fragments of extreme thinness (up to 1.0 mm) and similar curvature are believed to be fragments of lamp chimneys:

1T1G5-30, 1T1L2-31, 1T2F4-1, 1T2G2-33, 1T2G3-4, 1T2H2-10 and -13, 1T2H3-26 and -30, and 1T2M1-15.

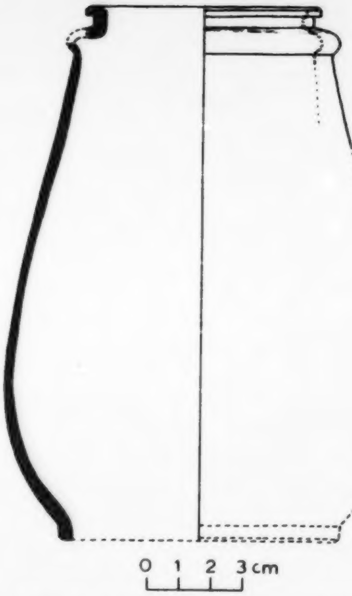


Fig. 9. Lamp chimney: cross section and profile of a lamp chimney, 1T1G6-1829.

Lamp Font

The only lamp font from the site (1T2E1-968) appears to have come from a composite lamp. (Composite lamps were elaborate table lamps in which the font is made of glass, the stem of metal, and the base of marble, metal, or glass.) This font has three levels (Fig. 10a). The lowest is a short cylindrical extension 31 mm wide, 12 mm high and bearing a continuous thread. The base of this extension is flat and has two mould marks that cross each other at right angles (Fig. 10b). These mould marks go up the sides of the extension, but do not go onto the second level. The presence of the thread suggests that this part would screw into a metal stem. Above the extension is a flattened upward sloping area that curves onto the next level (Fig. 10a). The third level consists of upward- and outward-sloping ribs radiating from the second level. They are 7.7 mm wide at their basal termination.

In addition to the somewhat elaborate shape, the glass itself is decorative. Basically the glass is clear, but on the interior surface of the font is flashed a thin layer of transparent pink glass (2.5R) and on the exterior surface irregular, ovoid, translucent milk-white spots are flashed randomly (Fig. 10b). The technique of flashing was used to provide a cheaper imitation of cased glass (Davis and Middleman 1968: 106) which was popular during the last half of the 19th century.

Lamp Stems

There are two examples of lamp stems from the site, both of them in translucent white glass. The first fragment (1T1H4-5) is conical. At the wide end of the cone the glass turns outward and becomes almost horizontal; at the narrow end of the cone the glass curves outward to become roughly cylindrical. The diameter of the cone at the narrow end is 42 mm and at the wide end, 88 mm. A raised ridge 8 mm from the base of the cone encircles the cone horizontally. A similarly shaped lamp stem in Russell (1968: 175) is dated 1868 (Fig. 10c).

The second stem (1T1X1-38) is much more fragmentary. Its identification as a lamp stem is not positive but the thickness of the glass (5 mm) and its general shape suggest that this is its most probable use (Fig. 10d).

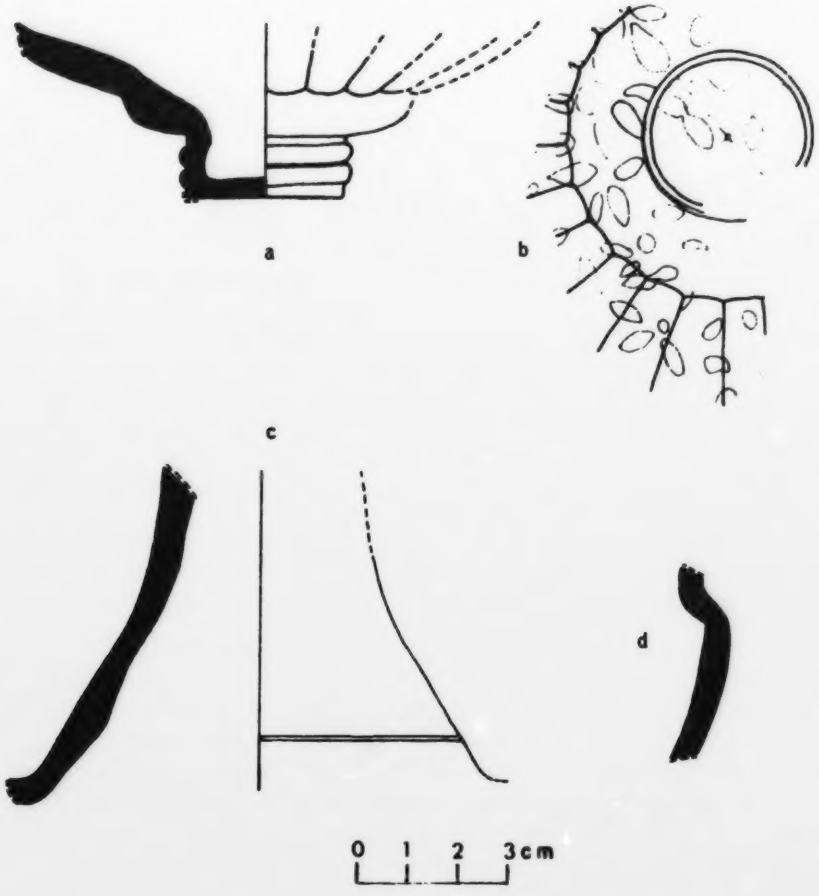


Fig. 10. Lamp parts: a, cross section and profile of a lamp font, 1T2E1-968; b, basal view of a lamp font, 1T2E1-968; c, cross section and profile of a lamp stem, 1T1H4-5; d, cross section of a lamp stem, 1T1X1-38.

Miscellaneous Glassware

Marbles

Eleven marbles excavated at Yuquot range from 14 to 16 mm in diameter. Three marbles were made of single colour transparent glass (1T1F2, 1T2J1, and 1T2M1), one of single colour opaque glass (1T1X2), two of opaque white glass with single colour streaks (1T1X2 and 1T2K2), three of mottled multi-coloured glass (1T1G1-5, 1T2F1-7, and 1T2L3A), and two "cat's eyes" of colourless glass with coloured twists (1T1J2-3, 1T1X2). Little is known concerning the dating and identification of the country of manufacture of marbles, although the general appearance of these examples suggests a 20th-century date. Their presence on the site indicates that they were popular playthings.

Lids

Three lids from Yuquot are not associated with tableware. The first of these (1T1F8-1269) is the corner of a flat lid from a more-or-less rectangular vessel, possibly a box used for cosmetics or toiletries. The glass is blue (5B) and is decorated in an elaborate manner. When viewed from above, one side of the rim is flat and the other is excurvate. The upper surface is covered in a complicated embossed design (Fig. 11d) and the lower surface is generally flat with three distinct levels of glass (Fig. 11c). The first level extends inward 12 mm from the rim and ends with a downward-projecting right-angled cover ring 3.5 mm wide. The cover ring, which follows the contours of the outer rim, projects 2.8 mm below the first level and rises 5 mm to the third level which is completely flat. No reference to a similar object or pattern was found in the literature.

The second lid (1T1X2-59) is probably from a cosmetic jar although it may not be a lid at all. The glass is milk white and translucent with a rough "orange-peel" upper surface and a smooth lower surface. The upper surface (Fig. 11f) bears three concentric grooves with rounded bottoms separated from each other by rounded ridges (Fig. 11e). This design is 31 mm in diameter. The centre, 16 mm in diameter, is plain. At one edge of the fragment, concentric with the grooves, are the embossed capital letters MAS, 3 mm high. On the lower surface (Fig. 11g) is a raised reversed figure 6 or 9 that is 3.8 mm high. At one edge of the fragment directly underneath the MAS is a very slightly raised area with faint concentric grooving which may be the edge of the lid. The whole lid is slightly curved except near what may be the edge where it appears to flatten.

The third lid (1T2K2A-7 not illustrated), of clear glass, is circular (about 80 mm in diameter) and consists of a basically flat, patterned top at right angles to a cylindrical projection 19 mm high which leads to the rim. The projection is decorated by a regular series

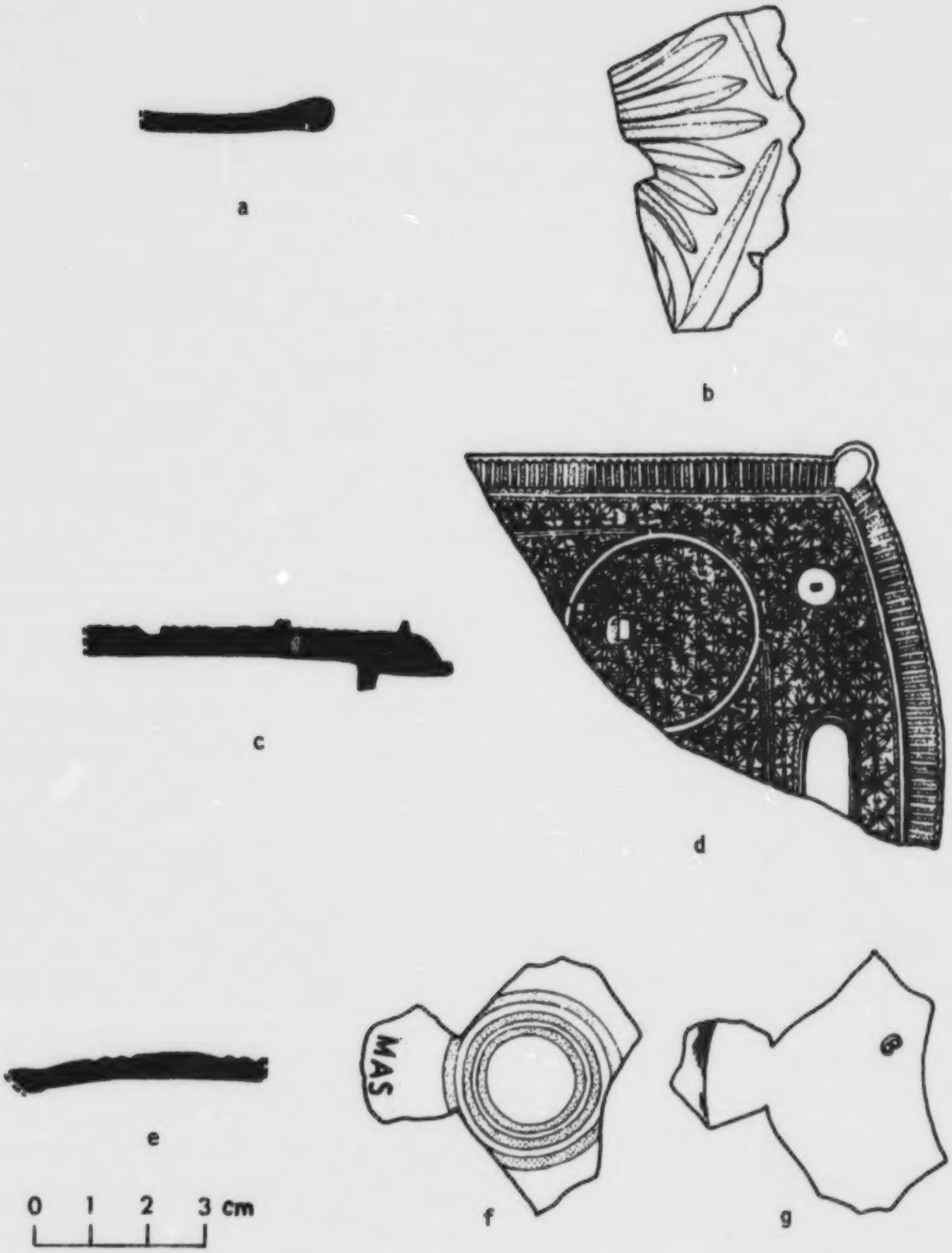


Fig. 11. Miscellaneous glassware: a, cross section of a pressed glass unidentified object, 1T2M1-14; b, top view of a pressed glass unidentified object, 1T2M1-14; c, cross section of a pressed glass lid, 1T1F8-1269; d, top view of a pressed lid, 1T1F8-1269; e, cross section of a pressed glass lid, 1T1X2-59; f, top view of a pressed glass lid, 1T1X2-59; g, basal view of a pressed glass lid, 1T1X2-59.

of vertical mitred grooves. The top consists of a flat band 5.5 mm wide encircling an area which appears to be decorated by a mitred starburst pattern. An encircling mould line is located in approximately the centre of the band. On the interior surface of the top is the beginning of a raised rounded ridge. Again, there is a distinct possibility that this object is not a lid. Since the object is pressed, it post-dates 1825, but no closer date can be assigned to it.

Unidentified Object

A flat, apparently circular, object of unknown function is of clear glass with a pressed design on one surface (1T2M1-14). The rim is scalloped and inside this is a series of mitred grooves (Fig. 11a, b). Inside these grooves are a series of concave rays radiating from a central point. The object appears to have been reheated after pressing (to restore brilliance) as the edges of the design are diffused. The object could date either to the 19th or 20th century.

Unidentified Glassware

The remaining objects that are not commercial containers are either too fragmentary for positive identification of their use or pattern or they were not illustrated in the available reference material. As almost all are of pressed glass, they would have been produced after 1825, but may, with the noted exceptions, have been produced at any time since then. No illustrations are provided as the fragmentary nature of the examples makes them difficult to illustrate meaningfully. They will be referred to as vessels.

Vessel 1 (1T1X1-57) appears to be a rim from a clear glass cylindrical object. The rim is flattened round and 5 mm thick. Eleven mm below the top of the lip is an embossed two-part motif consisting of elongate V-shaped rays spreading out from a common centre and beside this is a circular design outlined by interlocking raised pyramids and diamonds.

Vessel 2 consists of two (1T2A2-23 and -24), possibly three (1T2G2-32), fragments of clear glass. The vessel is flat-sided with the sides meeting at an angle slightly greater than 90°. The corner is rounded and curves outward vertically. The rim is rounded, 6 mm thick, and horizontally straight and appears to have a horizontal mould line on its inner surface. The external profile of the side is straight, but 11 mm below the rim the profile cuts inward sharply in an abrupt downward-sloping serration. The profile then slopes downward and outward. On each side below the serration appears a circular impressed star-shaped design. The third fragment (1T2G2-32) has the abrupt serrated drop below the rim, but the rim itself, instead of being horizontally straight, is wavy. The fragments appear to be from a small shallow rectangular vessel, possibly an individual salt cellar.

Vessel 3 consists of two fragments (1T1K1-16) of pale yellow (5Y) glass. The first fragment is slightly rounded and bears a faint raised, stippled leaf and flower motif on its convex surface. The second fragment appears to be a rim flange. One surface of the rim is comparatively flat and smooth, but this curves abruptly downward (or upward) at about a 45° angle. The other surface is gently incurvate and bears a stylized stem motif. It is difficult to say which of these surfaces is the upper and which is the lower. The design has not been identified.

Vessel 4 consists of two fragments characterized by iridescent gold film on the surfaces of clear glass. The first is a rim fragment (1T1X2-93) with a raised stem and leaf design on the exterior surface. The second fragment (1T1X2-87) bears a series of parallel, vertically oriented, mitred grooves above which is a floral design composed of ovate raised areas. The iridescence changes from gold to rose. The pattern cannot be identified, but the iridescence is characteristic of glass produced in the United States from about 1900 to 1920. It is known popularly as Carnival glass and is a mass-produced imitation of the exclusive Tiffany and Aurene Art Nouveau glass in vogue about 1900 (Jenkins 1965: 25).

Vessel 5 is a clear glass rim fragment (1T1F2-2) 6 mm thick with distinct mould lines on both edges of the rounded rim. The rim has scallops 26 mm long. The fragment is slightly concave but on the convex surface 34 mm below the lowest point of the rim the profile moves inward at about a 45° angle.

Vessel 6 is a clear glass base fragment (1T1X2-86), badly weathered by waves, with raised rounded designs on the lower surface.

Vessel 7 is from a flat-sided vessel (1T2F5A-2) in which the glass thickness varies from 2 to 5 mm. At one edge is a raised cable motif (Lee 1931: Plate 58) which is reflected as a depression on the opposite surface. This implies that the glass was blown in a mould rather than pressed. The cable motif became popular after the laying of the Atlantic Cable in the 1860s (Lee 1931: 180).

Vessel 8 consists of body fragments (1T1M2C-33 and 1T1M2A-26) from a cylindrical vessel, possibly a goblet or spoonholder. About 52 mm above the point where the body curves into the base begins a complicated embossed design motif. First are a series of fine, vertical, parallel lines about 5 mm high. Directly above these is a raised V-shaped horizontal ridge 2.6 mm wide, next a row of pointed domes 2.6 mm wide and 2 mm apart, and then another V-shaped ridge. Above this the glass is stippled and 4 mm above the second ridge begins a V-shaped half-circle enclosing a star-shaped design. The pattern, called "Sheraton" or "Ida," was produced about 1885 by Bryce, Higbee and Company of Pittsburgh (Revi 1964: 92) and appears to have been reissued about 1912 by the United States Glass Company (Revi 1964: 318). Illustrations of tableware in this pattern can be found in Unitt and Unitt (1969: 172). As the glass has a purple tint, this object was probably manufactured sometime between 1885 and the end of World War I.

Vessel 9 consists of three fragments (1T2M1-10, 1T1X2-60) of vertically ribbed translucent white glass. One fragment has a scalloped rim. In the depressions between the ribs the glass takes on a bluish cast because of the thinness of the glass. Manufacture of milk-white glass became commercially successful during the 1870s (Lee 1944: 253) and mili-white glass is still widely used today in the production of cosmetic containers.

Vessel 10 (1T1H3-18 and 1T1G4-1770) is of thin (1.7 mm) almost opaque, homogeneous milk-white glass. The vessel appears to have been cylindrical, with a rim flaring outward in a sweeping curve to a diameter of about 120 mm. On the exterior of the body, about 30 mm vertically below the rim, is a raised and rounded horizontal ridge 5 mm wide. Below this is a row of raised beads each 7 mm in diameter. The vessel was probably blown in a mould as the interior surface is concave where the exterior is convex. A slight indentation on the bottom of the lip may be a mould line.

Vessel 11 (1T2J1-20), opaque pale blue (2.5B), is flat with embossed lettering VE over Kin. in script over D. It is probably an example of Anchor Hocking's heat resistant glass, "Fire King." This type of glass is designed to withstand heat shock and would be used in the preparation and serving of foods. As Anchor Hocking Glass Corporation of Ohio was established in 1937 (Toulouse 1969a: 20), this vessel was manufactured after that date.

Containers and Container Manufacturing

A container is a term used for sealable vessels such as glass bottles or jars. A jar is referred to as a wide-mouthed container, a bottle as a narrow-mouthed container. The distinction between them is arbitrary as there is no established rule (Toulouse 1969a: 529).

The containers have been divided first by function, then by shape, or, as in the case of the carbonated beverage bottles, by company. Figure 12 shows the terms used in this report for different parts of a bottle or jar. The history of the glass-blowing machine and the finishing tool will be discussed here as they occur frequently in the following chapters as dating evidence. Other developments more closely associated with a particular function will be discussed in the following chapters.

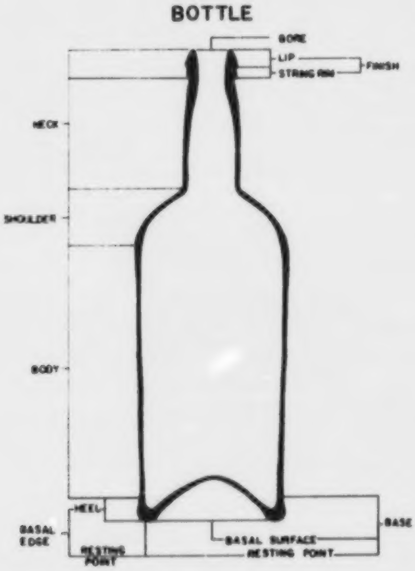


Fig. 12. Parts of a container.

Glass-Blowing Machines

Machines for producing jars were first designed in the United States in 1882 but were not used on a large commercial scale until 1892-93 (Scoville 1948: 324). Machines for producing bottles were first used in England in 1886, but, again, were not utilized to any great extent in North America until after the introduction of the Owens machine in 1904 (Scoville 1948: 180). Mouth-blown containers were still being made as late as 1925, though on a diminishing scale (Davis 1949: 215; Wyatt 1968: 21, 22). Even in the 1930s small production runs for specialty containers and some glass companies were still using mouth-blown processes, but the majority of containers were being made by machine. As a general rule, machine manufacturing of jars began after 1892, bottles after 1904, and mouth-blowing for most containers ceased about 1925.

All glass-blowing machines for manufacturing containers use the same principle of first forming the finish and parison (i.e. preliminary container shape) in a blank mould and then transferring the half-finished bottle to the blow mould where it is completed. The mould marks left by machines are as follows: 1. one or more mould lines encircling the top of the lip; 2. a mould line encircling the neck just under the finish; 3. two vertical mould lines extending from the heel mould line to one of the mould lines at the top of the lip; 4. a mould line encircling the heel, and 5. "ghost" lines from the blank parison mould in the body and base areas, from the parison mould. The "ghost" lines often wander from the more distinct lines from the blow mould. Numbers 1 and 5 are exclusive to machine-made containers (Toulouse 1969b: 586, 587), whereas numbers 2, 3, and 4 may also be found on some mouth-blown containers, depending on the mould construction.

No distinction has been made in the above discussion between semi-automatic and automatic machines because, at the present, the products are difficult to distinguish from each other. Valve marks, shear marks, and baffle-plate marks located on the base of a container are circular, often idented grooves that are seldom centred. They are marks left by the mould part which closes the blank or parison mould after it has been automatically filled. They are sometimes an indication whether a container was made on a semi-automatic or automatic machine (Toulouse 1969b: 587).

Finishing Tool

A photograph of a finishing tool appears in Kendrick (1968: 145). It is a "hand held clamp whose jaws, closing about the finish area and which have the contour desired in the finish, also contact the neck area" (Toulouse 1969b: 533). A cylindrical rod in the centre of the tool is inserted in the neck to keep it from collapsing between the jaws. Either the tool or the container is rotated. This action tends to obliterate mould lines and to leave faint horizontal lines in the neck-finish area.

The finishing tool was developed in England in the 1820s and the first United States patent was issued in 1856. Patents were still being issued for these tools as late as 1916 (Toulouse 1969b: 533). Finishing tools were used on mouth-blown bottles.

Wine, Spirits, and Beer Bottles

For the purposes of this report the wine and spirits bottles will be separated from the beer bottles. The division has been made on the basis of either finish form or glass colour, or both. Twentieth-century beer bottles usually have crown finishes and tend to be made of amber glass; however, 19th-century beer bottles are harder to distinguish from wine and spirits bottles particularly when the bottles are fragmentary. For this reason some of the bottles discussed in the wine and spirits section may actually be beer bottles.

Wine and Spirits Bottles

Cylindrical bodies. Two reconstructable bottles, eight finishes, some neck and shoulder fragments, and seven base fragments have been attributed to the cylindrical-body category.

The first reconstructable bottle (1T1G4-2, -3, and -1744, 1T1H3-4, 1T1H4-7, -8, and -10, and 1T1H5-26), of dark green glass (2.5GY), is of the shape often referred to as "hock" or "champagne." There are three other probable bottles of the same shape (1T1G5-1796, 1T2G4A-5, 1T1X2-48, and 1T2H3B-34). The champagne finish consists of a lip with a flat upper surface slanted upward toward the bore and a flattened string rim (Fig. 13a). The finishes are usually well made. The shoulder tapers outward from the comparatively straight-sided neck to the body in such a way that there is no distinct junction of the neck-shoulder and shoulder-body. The body is a straight-sided cylinder with a rounded basal edge. The kickup is bell-shaped with a flat top. On the exterior of the pushup, at the tip, is a downward-projecting nipple of glass (Fig. 13b). The bottle probably held 26 oz.

This bottle shape does not usually have mould marks. During the forming process the bottle was spun in the mould specifically to eliminate mould lines and to give a high polish to the glass. Usually faint horizontal lines are visible on the body and the shoulder. Turn mould bottles became popular in the 1870s and appear to have been produced until the 1920s when production of mouth-blown bottles ceased (Toulouse 1969b: 532).

The second cylindrical bottle, represented by a finish, some shoulder and body fragments, and a base (1T1X1-26 to 30), is of aqua-coloured glass (2.5G). The finish encloses a bore about 18 mm in diameter and consists of a flattened lip 16 mm high and a downtooled string rim, 7 mm high, with an uneven lower edge (Fig. 14a). Below the finish the neck profile appears to be straight. There is no evidence of mould lines in the region of the finish which, from the faint horizontal striations, was probably made by a finishing tool.

One of the shoulder fragments has an obvious vertical mould mark and a horizontal mould line encircles the heel just above the resting point. The shallow (6 mm high) dome-shaped kickup (Fig. 14b) has the

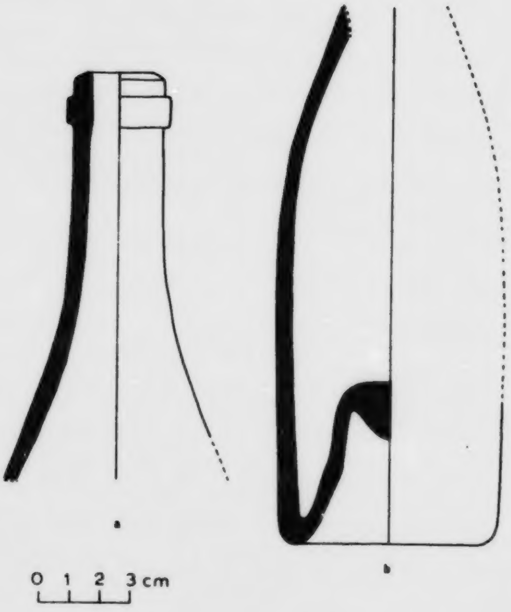
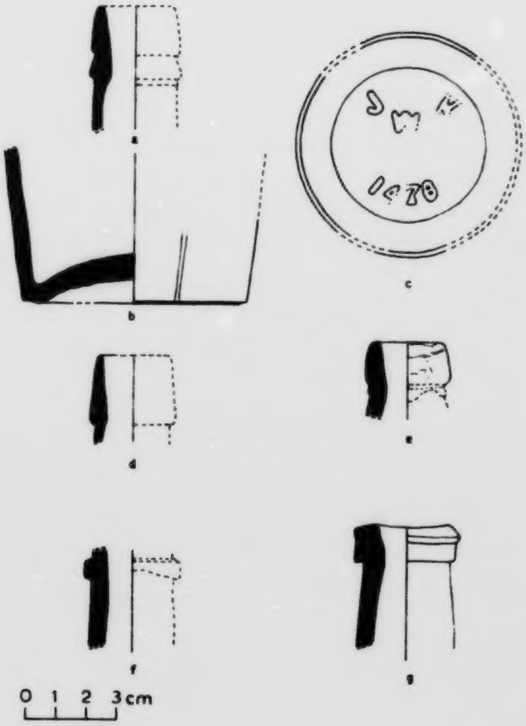


Fig. 13. "Champagne" bottles: cross section and profile of "champagne" bottles. a, 1T1G5-1796; b, 1T2G4A-5.

Fig. 14. Wine and spirits bottles: a, cross section and profile of a bottle finish, 1T1X1-29; b, cross section and profile of a bottle base, 1T1X1-29; c, basal view of a bottle base, 1T1X1-29; cross section and profile of bottle finishes: d, 1T2G6-29; e, 1T1X2-40; f, 1T1A3-217; g, 1T2K2B-46.



embossed letters J, W, and K and the number 1478 (Fig. 14c). The diameter of the base is 75 mm.

Precise dating of this bottle is not possible, but the absence of a pontil mark suggests a post-1850 date and the use of the finishing tool suggests a pre-1920s date.

Five base fragments of green glass (5Y, 10Y and 2.5GY) are worth noting. Three of these (1T2H2A-16, 1T2H2A-15, and 1T3C1) have a straight body profile with a rounded basal edge leading to a kickup. They were probably manufactured in the last half of the 19th or first quarter of the 20th century. The base 1T2A2-6 has a straight-sided body which ends abruptly in a horizontal mould line at the basal edge. The base diameter is about 89 mm. The base was probably manufactured after 1820 and before 1900. The base fragment 1T2G3-2 has a slight basal sag. No definite date can be assigned to this condition, but by the 1830s it had become much less common.

Finishes. There are five examples of finishes with tooled lips but no string rims; however, some of the finishes are so fragmentary that their lack of string rims cannot be proven. They may even be from beer bottles.

Four of the finishes (1T1G4-5, 1T2G4A-11, 1T2G3-2, and 1T2G6-29) in dark green glass (10Y and 2.5GY) have slightly downtooled lips ranging from 18 to 25 mm in height with bores up to 20 mm in diameter (Fig. 14d). They are all hand-tooled and some of them are quite irregular. The lip form suggests a date later than 1820 and the manufacturing evidence suggest a pre-1925 date.

The fifth lip fragment (1T1X2-40) of dark green glass (7.5Y) has an arc-like profile with a constriction at its base. Some excess glass has been folded onto the neck below this constriction (Fig.14e). The lip is 14 mm high with a bore diameter of 15 mm.

There is one example (1T1A3-217) in green glass (5GY) of a neck fragment without a thickened lip. The string rim is flattened (Fig. 14f) with the top edge appearing to be relatively straight, but with the lower edge so irregular that the string rim height varies from 3.5 mm to 6 mm. Bore diameter is about 5 mm. There appears to be a vertical mould line close to the finish. The bottle is mouth-blown, a feature which dates it before 1925, but no further dating is possible.

There are two examples of two-part finishes. The first fragment (1T2K2B-46) of dark green glass (2.5GY) consists of a V-tooled everted lip about 5 mm high and a flat string rim 5-8 mm high (Fig. 14g). The bore diameter is 20 mm. The neck profile is straight, slanting outward toward the shoulder. The finish is irregular and the spiralling grooves on the neck indicate that the bottle was mouth-blown. The finish form is similar to that on many English "wine" bottles of the late 18th century. This fragment is one of the few glass objects from the early European and American contact period at the site. Other glass from the same provenience dates to the 20th century.

The second finish (1T1A4-250) of dark green glass (10GY) is very fragmentary. The lip appears to have been flattened and the string rim is downtooled, 6 mm high, and evenly made except for a wide smear of excess glass below the rim. As the bottle was finished manually it pre-dates 1925.

Case bottles (taper gins). The term "case bottle" is used in most archaeological reports and general books on glass; however, in glass trade catalogues the items are referred to as "taper gins" (Putnam 1965: 135). They are square-sectioned, made of dark yellow-green glass, and have with a short neck and sides tapering outward from base to shoulder. They are usually regarded as having been used for gin or rum although they could have been used for any liquids. From six to ten case bottles, all of dark green glass (7.5Y and 10Y), are represented in this sample.

There are three necks (1T1X2-39, 1T2A2-27, and 1T2M2-27) the finishes of which consist of a slightly downtooled lip with a relatively straight profile but an uneven lower edge. On 1T1X2-39, which is complete, the lip height varies from 19 to 25 mm and the neck height including the finish is 34 mm. The neck-shoulder junction is sharply curved. As the necks are obviously hand finished, they pre-date the wide-spread use of the automatic bottle machine. The lip form is 19th rather than 18th century.

The body fragments are flat with the sides meeting at 90° angles. The corners can be quite sharp or gently rounded.

Five base fragments from the site represent the types of bases in which the basal edges arc upward from the corners so that the bottle rests only on the four corners. The basal surface is concave. The fragments 1T2B1A-27, 1T2M1-20, and 1T1X1-19 are otherwise not complete enough for further differentiation.

Base 1T2A2-2 has a low dome-shaped kickup with an impressed flower-like mark 11 mm in diameter at its centre (Fig. 15a). The

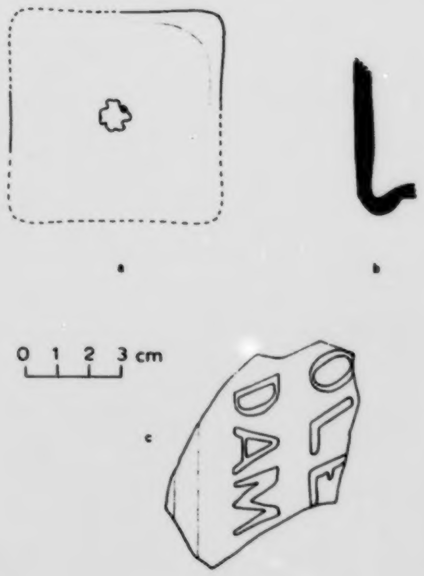


Fig. 15. Case bottles: a, basal view of a case bottle showing impressed mark, 1T2A2-2; b, cross section of a base from a case bottle, 1T2G4-9; c, side view of a case bottle showing lettering, 1T1F2-12.

absence of any roughness on the base, particularly around the design, suggests that it is not a pontil mark. The base is 66 mm wide. Faint vertical "withdrawal" lines on the sides and depressions on the sides near the corners suggest that although there are no visible mould marks, the bottle was blown in a mould. Many of the fragments associated with this base have been misshapen by contact with fire. Precise dating is impossible, but the uniform glass thickness (4 mm) and the smallness of the basal dimensions suggest a 19th-century manufacture date.

The fifth base (1T3A1-9) appears to have a circular depression with the centre of the base pointing downward. As there is no pontil mark, it probably dates after 1850 (Scoville 1948: 17).

A sixth base (1T2G4-9) will be discussed with body fragments 1T1F2-12 and 1T1G5-28 as they are the same colour (7.5Y) and have bevelled body corners. The fragment 1T1F2-12 has embossed, slanting, vertically oriented lettering .OLE. and ......DAM (Fig. 15c). The lettering is probably from the company I.A.I. Nolet or A.C. Nolet of Schiedam, Holland (Shafer 1970: 43). The base is of a kind often found on 19th-century case-bottles. The basal edge is rounded with a horizontal mould line just at the heel (Fig. 15b). The basal surface is recessed, probably flat, and square. An embossed figure too fragmentary to identify appears on the surface. This type of base was made at least as late as 1911 (Putnam 1965: 152).

Beer Bottles

The beer bottles were identified on the basis of their crown finishes or their colour, or both. The crown finish, the common finish on modern beer and carbonated beverage bottles, was invented in 1892 by an American, William Painter (Lief 1965: 17). With three exceptions, the colour of the beer bottles is dark reddish amber (2.5Y to 5YR). One of the exceptions is green (5GY) with a crown finish. The other two exceptions are also green (2.5GY and 5GY), but do not have an extant finish although embossed lettering on the body indicates the brewing company. The green bottles will be discussed first.

A bottle consisting of finish, body, and base fragments (1T1X1-7 to 10) has a crown finish with no mould marks. The basal edge is rounded and the slightly concave basal surface bears a raised shield and other embossed figures too fragmentary to identify. The base is about 70 mm in diameter. A horizontal mould line encircles the heel and faint horizontal striations on the body and finish suggest that the bottle was turned in the mould. Because of the curvature of some of the fragments, the body-shoulder-neck relationship is probably similar to the champagne shape described earlier in this chapter. The absence of machine-made mould marks on this bottle and the faint horizontal striations indicate that this is a mouth-blown, not a machine-made bottle. It was probably made some time between 1892 and the mid 1920s.

The other two green bottles were used by the Victoria Brewing Company and the Victoria-Phoenix Brewing Company both of Victoria, British Columbia. One (1T1G3-1, 1T1G4-12, and 1T2G6-1384) is embossed VICTORIA BREWING C[o] VICTORIA (Fig. 16a) in letters 10 mm high. There appears to be a diamond-shaped figure above the second VICTORIA. The neck is cylindrical, the basal edge is rounded, and the kickup rises sharply then levels off for a flat-topped profile. A vertical mould mark extends over the shoulder onto the neck, but no mould mark is apparent near the heel. The base diameter is about 63 mm.

The second bottle (1T2H3B-36) has an embossed figure which has been identified as a phoenix rising from flames (Fig. 16b) and lettering [VIC]TOR[IA] and NO[T] TO... The letters NO.TO are 11.4 mm high and ...TOR.. are 12.8 mm high. The basal edge is rounded with what appears to be a horizontal mould line at the heel. The kickup is a shallow depression with a flattened top. The base diameter is about 80 mm.

The Victoria Brewing Company began in 1858. In 1892 it was listed in the British Columbia Gazette as the Victoria Brewing and Ice Company and in 1893 it merged with the Phoenix Brewing Company to become the Victoria-Pheonix Brewing Company (Ireland 1969 personal communication). Therefore, the first bottle dates between 1858 and 1893 and the second dates after 1893. As both bottles are almost the same colour (2.5GY and 5GY) and quality and as the basal configurations and the lettering styles are the same, they probably date close to the same period, that is, about 1893. Fragments of these bottles were also found in 1T2L1-16, 1T2H2-5, 1T1K2A-15, and 1T1J1-10.

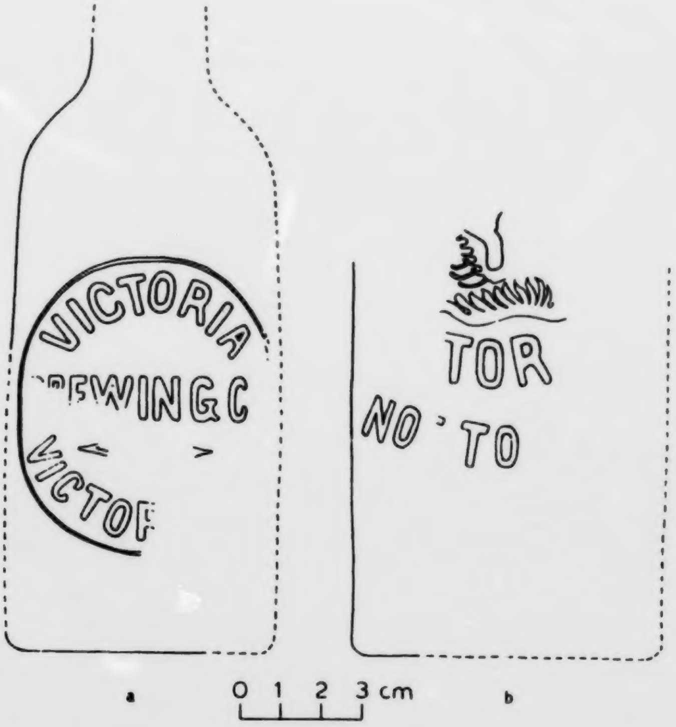


Fig. 16. Beer bottles: a, front view of the lettering on a Victoria Brewing Company bottle, 1T1G3-1, 1T1G4-12, and 1T2G6-1384; b, front view of the embossing on a Victoria-Phoenix Brewing Company bottle, 1T2H3B-36.

The dark reddish amber bottles are not represented by any complete or even reconstructable bottles.

Necks 1T2L1-28, 1T2M1-30, and 1T1K2A-7, not associated with bases, have crown finishes.

Six base fragments are associated with crown finishes: 1T1J1-5 (Fig. 17a), 1T1X2-31 and 1T1L1A-4 (Fig. 17b), 1T2K2A-24 (Fig. 17c), 1T2J1-35 (Fig. 17d), 1T1X2-32, and 1T2K2A-29. Without exception the bottles have been made by machine. The bases are about 60 mm in diameter and all have uncentred baffle plate marks, embossed lettering, and ribbing or stippling on the testing point of the basal edge. This ribbing or stippling is put where the hot bottles will contact the conveyor belts during their manufacture (Moody 1963: 92). These are all modern bottles and two of them can be dated by their basal coding.

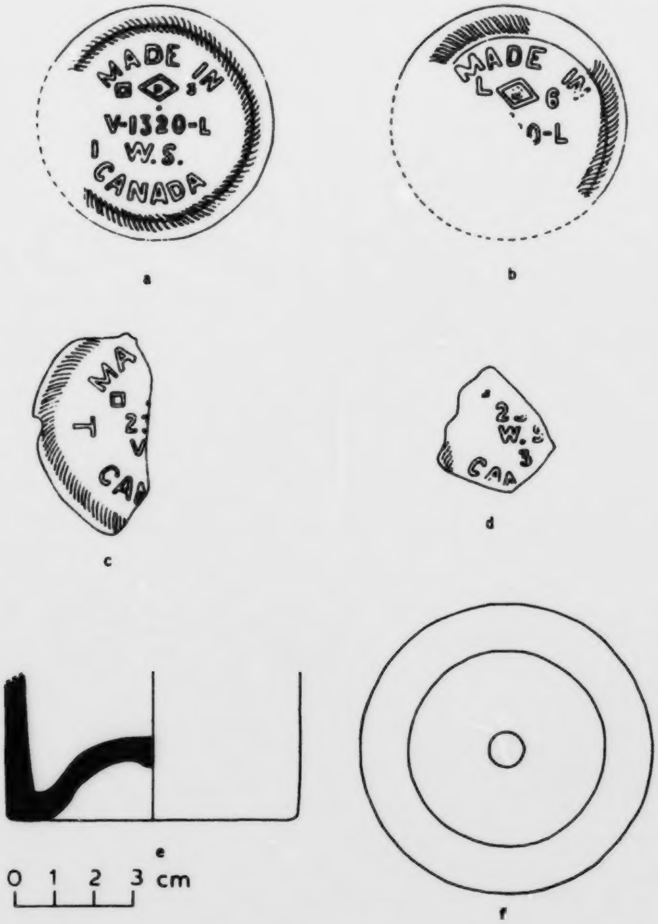


Fig. 17. Beer bottles: a, b, basal view of beer bottles made by the Dominion Glass Company - a, 1T1J1-5; b, 1T1X2-31; c, basal view of a beer bottle, 1T2K2A-24; d, basal view of a beer bottle, 1T2J1-35; e, cross section and profile of a beer bottle base, 1T1L2A-29; f, basal view of a beer bottle base, 1T1L2A-29.

Figure 17a (1T1J1-5) shows a bottle made in July-August 1953 or 1963 at the Dominion Glass factory in Redcliff, Alberta. Figure 17b (1T1X2-31) shows a bottle made in March-April 1946, 1956, or 1966 at the same factory. The other numbers are mould and cavity codings (Rosewarne 1970 personal communication). The bases in Fig. 17c and d are too fragmentary to identify.

Base fragments not found in association with finishes and included in this section on the basis of colour only are as follows.

Three base fragments, 1T1X1-4, 1T2J1-37, and 1T2J2-37, have horizontal mould lines on the heel with diagonal ridges on the resting point (Fig. 17a-d).

Base 1T1J1-8 has a base about 57 mm in diameter with a flat basal surface 4 mm deep. This surface is covered by irregularly spaced, faint, circular ridges concentric with the geometric centre of the base. The resting point is a flat ledge with a mould line encircling the basal edge. No dating is possible for this fragment.

Base-body fragment 1T1L2A-29 has a base diameter of 74 mm with an extant body 120 mm high. The heel forms an abrupt right angle with the base (Fig. 17e). The resting point is a flat area 11 mm wide which curves upward 15 mm to form a domed kickup. On the exterior tip of the kickup is a dome of glass 10 mm in diameter (Fig. 17e, f). Markings on the body indicate it was turned in the mould which dates it from about 1870 to the 1920s (Toulouse 1969b: 532).

Carbonated Beverage Bottles

As companies marketing carbonated beverages tend either to mark their bottles or adapt a distinctive body design and sometimes colour, the following discussion is arranged by company. Unidentifiable fragments will be described at the end of the chapter. Companies represented at the site are Morley, Coca-Cola, 7-Up, Stubby, and Orange Crush.

Morley

Mr. Chris Morley manufactured soda water and other kinds of syrups in Victoria from 1880 to 1914 (Ireland personal communication). His company is represented by two partial bottles (1T2K2B and 1T2G5-37), one base (1T2H2-4), two shoulder fragments (1T1K2A-12 and 1T2G4B-28), and one probable body fragment (1T1K2B-22).

The bottles are pale blue-green glass (10G to 7.5BG) and have cylindrical bodies about 178 mm high bearing vertically oriented embossed lettering (Fig. 18a). The bases are about 60 mm in diameter with a flat resting point and a concave depression about 5 mm deep. There is a ridge around the body 12 mm from the resting point. From this ridge two mould lines extend upward on opposite sides of the bottle and end at the base of the neck. The neck is very short at 24 mm high. The finish consists of a lip 20 mm high with a rounded profile (Fig. 18a).

One of the bottles (1T2G5-37) had a Hutchinson's Patent Spring Soda Bottle Stopper (Fig. 18b) inside the bore. These internal stoppers were patented in the United States in 1879 and were produced until 1912 (Riley 1958: 261). "There were three wire lengths to accommodate neck lengths, five washer sizes for neck diameters" (Lief 1965: 14). The pressure of the carbonation held the stopper against the base of the neck, therefore, the neck would have to be fairly short to facilitate opening the bottle.

Coca-Cola

Coca-Cola was first produced in 1886 by an American, Dr. John S. Pemberton. Like many carbonated beverages, its early introduction was in drugstore soda-fountains, but by the early 1890s it was appearing in bottles (Riley 1958: 118). The familiar "hobble-skirted" Coca-Cola bottle was patented in 1915 (Riley 1958: 138). The shape became a registered trademark in 1960, along with "Coca-Cola" in 1893 and "Coke" in 1945 (Gilborn 1968: 16).

There are at least two and possibly three Coca-Cola bottles from the site, all in clear glass and the traditional shape (1T2K2A-37 and 39, 1T1X2-76, 1T2L2-1, 1T1X1-43, and 1T2K1-27). The labelling on the

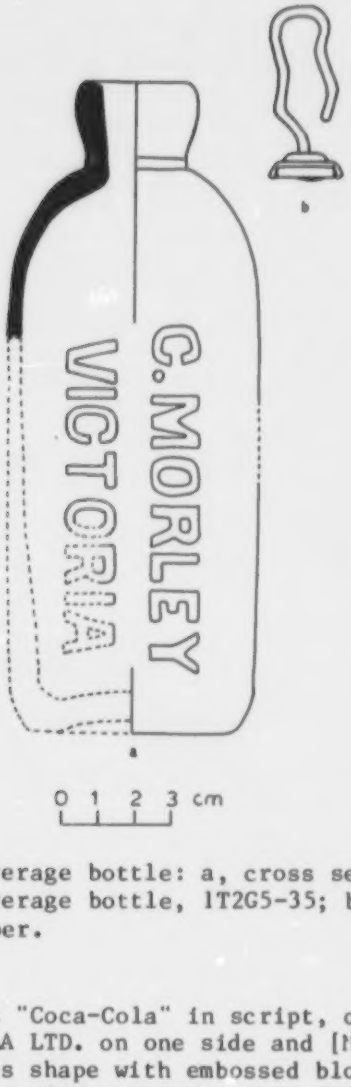


Fig. 18. Carbonated beverage bottle: a, cross section and profile of a C. Morley carbonated beverage bottle, 1T2G5-35; b, Hutchinson's Patent Spring Soda Bottle Stopper.

horizontal body panel is "Coca-Cola" in script, over printed TRADE MARK REGISTERED over COCA-COLA LTD. on one side and [MI]N. CONTEN[TS] ... OZS. Bottles of this shape with embossed blown lettering were manufactured from 1916 to 1965 and "Min. Contents" indicate that the bottles were manufactured between 1951 and 1959 (Gilborn 1968: 15).

Seven-Up

Seven-Up was introduced in 1928 (Riley 1958: 140). There is one provable example of a Seven-Up bottle (1T1A2-171X and 1T1A4-251) and some body fragments of a similar dark green colour. The provable body fragment (1T1A2-171X) has several rows of white enamelled lettering including parts of the familiar "Fresh up with," "you like it", and the list of contents. This is a 12-fluid-oz. bottle which was introduced during the 1950s (Riley 1958: 157). A base fragment (1T1A4-251) has embossed lettering and numbers FL. OZ., 6 and 1 on the basal surface.

Stubby

Stubby began to be marketed in the United States in 1920 (Munsey 1970: 41). Fragments of three or four Stubby bottles were found on the site (1T2K2B-41, -42, and -45 [2 bottles], 1T2K2A-19 and -24, 1T1L1B-39, 1T2L40-1, and 1T1X1-44). The glass is clear with a white and red fired-on vitreous label (A.C.L. applied colour label) in the body-shoulder area. The design consists of the word STUBBY written twice horizontally across the shoulder. Below this on one side is a red circle enclosing a white (or yellowed) head and shoulder sketch of a man with his right arm raised. Below this are the words (in white on red background) [A] ZIP IN [EVERY SIP] over what appears to be STUBBY (in red on white). There appears to be a variation in size of the figure of the man and on one of the examples he is not outlined in red. Bottle 1T2K2B-45 has a crown finish.

Applied colour labels (A.C.L.) began to be used commercially in 1934 and in 1937 Owens-Illinois developed the first fully automatic machine for applying them (Riley 1958: 145).

Orange Crush

Orange Crush began in 1916 and developed a specialty bottle design in 1920 (Riley 1958: 138, 234). Presumably the fragments from this site are from examples of this design.

There are ten cylindrical body and shoulder fragments with horizontal ribbing 5 mm wide that terminates in a raised line perpendicular to the ribbing. This is followed by a vertical groove, then another raised line, and then another series of horizontal ribs. Nine of the fragments (1T1X2-33 and -34, 1T2J1-34, 1T2K1-7 and -10, and 1T2K2A-26) are yellow-red (5YR to 10YR) and the other (1T1X2-88) is clear. Probably the amber-coloured bottles are earlier than the clear one.

Unidentified Carbonated Beverage Bottles

The following fragments can not be attributed to any particular company. Three crown finishes (1T2K2A-14, 1T1K2A-5, and 1T2J2-30), two of which are clear and one of which is green (10GY), probably came from carbonated beverage bottles. They have been blown in an automatic machine (post 1904).

Non-returnable bottles of various colours (clear, 7.5GY, 10GY, 10YR, and 7.5YR) are represented by the following body and shoulder fragments: 1T1A1-8, 1T1A4-241X, 1T1A6-315X, 1T1G1-4, 1T1G3-6 and -7, 1T1H3-12, 1T1L1C-44, 1T2F10-1872X, 1T2J1-12, 1T2J2-33 and -36, 1T2K1-14, -16 and -25, and 1T2L1-2. Three fragments (1T1F2-9, 1T1X2-51, and -74) have a horizontal embossed inscription NO DEPOSIT * NOT TO BE REFILLED. Non-returnable bottles were introduced in the 1960s in Canada and in 1948 in the United States (Riley 1958: 153).

There are two bases. The first (1T1K1-17) is transparent green (7.5GY) with a round basal edge and a slight flattening at the resting point. There is a horizontal mould line at the heel and a baffle-plate line at the edge of the slight basal depression. The second base (1T1F7-1257) is pale green (2.5G) and 59 mm in diameter with a low dome-shaped kickup 6 mm high. The basal edge is rounded with the sides rising more or less vertically from the base. Two vertical mould lines are located on opposite sides of the base. The dating is uncertain, but it is probably late 19th century or early 20th century.

The following body or shoulder fragments have unidentifiable applied colour labels that were used on soft drink bottles for the first time in 1934 (Riley 1958: 267). This style of label tends to be used on soft drink bottles of the returnable variety although it is not necessarily restricted to them. The fragments are 1T2J2-38, 1T2K1-8 and -13, 1T2K2A-10, -18, and -23.

Perfume and Cosmetics Containers

Cosmetics containers occur in a variety of forms, either as jars or bottles, and may be decorated or plain. Of the following containers, some are obviously designed for cosmetics while others are presumed to be. Perfumes are usually packaged in small decorative bottles.

Perfume Bottle

The perfume bottle (1T1M1-54) is pale yellowish (7.5Y) with a diamond-shaped (horizontal section) body. The four flat sides meet in 120° angles and taper inward toward the neck (Fig. 19a). Although the total height cannot be measured, the bottle is at least 87 mm high. The body dimensions vary from 15 by 23 mm at the base to 10 by 11 mm at the neck. The basal edge is rounded and the base slightly concave. The finish consists of a 1 1/2-turn continuous screw thread above a rounded collar 2 mm high and 11 mm in diameter. The top surface of the lip has a series of four concentric steps leading up to the bore which is 4 mm in diameter.

Two vertical mould marks extend from the top of the lip down the wide axis of the body to a horizontal mould line encircling the base. Another mould mark encircles the collar and one may also encircle the bore. The mould marks indicate that this bottle was manufactured in the 20th century.

Hair Oil Bottle

The hair oil bottle (1T2G6-1349X) of clear glass has a cylindrical body less than 40 mm in diameter. Embossed lettering, COTTAN over PARIS, is enclosed in an oval figure (Fig. 19b). A vertical mould line appears on the body. In the Marshall Field & Company catalogue for 1892-93 (1892: 317), Cottan and Company are listed as selling a "Societe hygienique huile philocombe hair oil" at $4.50 a dozen. No precise date can be suggested for this bottle; the 1892-93 date merely indicates that the company was in business at that time.

Cosmetics Jars

Approximately five cosmetics jars are represented at the site. The first jar (1T1L2B-1) of translucent white glass has in horizontal section, an ovate body exterior, but a cylindrical body cavity (Fig. 19c). The diameter of the cavity is the same as the bore, 40 mm, because the cavity does not follow the contours of the exterior surface. On the exterior, the sides of the body taper slightly outward toward the shoulder, which makes a 90° angle with the cylindrical finish. The

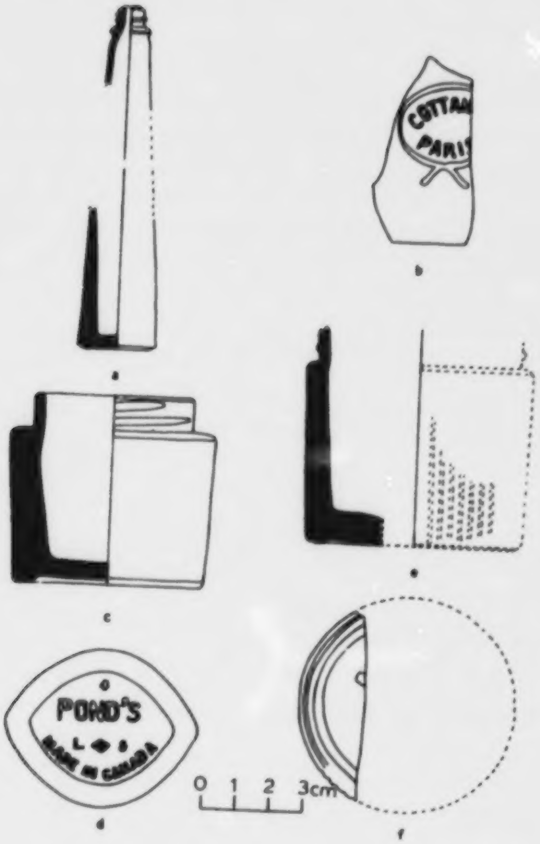


Fig. 19. Perfume and cosmetics containers: a, cross section and profile of a perfume bottle, 1T1M1-54; b, side view of a hair oil bottle, 1T2G6-1349X; c, cross section and profile of a Pond's jar, 1T1L2B-1; d, basal view of a Pond's jar, 1T1L2B-1; e, cross section and profile of a cosmetics jar, 1T1J1-3; f, basal view of a cosmetics jar, 1T1J1-3.

finish consists of shallow interrupted continuous threading with the gaps occurring at the two vertical mould lines. At the lowest termination of the thread is a small embossed figure 4 that is 1.7 mm high.

The body is 52 by 61 mm at the shoulder, 47 by 57 mm at the base, and 47 mm high. The total jar height is 57 mm. The resting point is a flat band 6 mm wide which slopes upward 2 mm to a flat basal surface. On this surface are embossed the figure 4 over POND'S over L D 5 over MADE IN CANADA (Fig. 19d).

There are four horizontal mould lines on this jar, one each at the heel, the body-shoulder junction, the outer lip edge, and the inner lip edge. Two vertical mould lines on the points of the long axis extend from the mould line at the heel to the mould line at the outer lip edge. The slight unevenness in the cylindrical cavity at the finish suggests that the jar was blown. The jar was made in March-April 1945, 1955, or 1965 by the Dominion Glass Company.

The second jar (1T1J1-3), of translucent white glass, has a cylindrical body about 65 mm in diameter. On the body are two bands of vertical ribbing opposite one another. Each band is 18 mm wide and contains six rounded ribs each 3 mm wide. From resting point to shoulder, the body is 52 mm high. The 3 mm-wide shoulder is formed by a reduction in glass thickness (Fig. 19e). Above the shoulder is a threaded finish 10 mm high. Either the thread is interrupted at the vertical mould lines or the closure screwed on in a counterclockwise direction.

Inside the resting point of the jar are two rounded ridges 3 mm wide which step upward slightly to a flat basal surface. Part of a sharply impressed rectangle is found on this surface (Fig. 19f).

Horizontal mould lines are found encircling the resting point, the inner and outer edges of the lip, and just below the body-shoulder junction. A vertical mould line extending from the resting point to the outer edge of the lip appears to be centred between the bands of ribbing on the body. From the evidence of the mould lines the jar was made in a machine. As the body cavity and the bore appear to have the same diameter, the jar was probably pressed. It probably dates to the late 19th or 20th century.

One or two jars are represented by cylindrical body fragments (1T2K2A-17, 1T2K1-5, and 1T2G2-29) which are transparent blue (5PB). Fragment 1T2K2A-17 has a vertical mould mark and turns inward at both ends. Fragment 1T2K1-5 appears to be a shoulder fragment from the same jar.

The last fragments are probably from cosmetics containers although they are not necessarily jars. Of two fragments of translucent white glass which may be cosmetics jar fragments, the first (1T2L1-3) has a threaded finish and the second (1T1E2-5) is a flat-sided vessel with the sides meeting at an angle greater than 90°.

Druggists' Bottles

"Druggists' Bottles" is a general term used to cover the range of products dispensed by a pharmacy such as prescription bottles, patent medicines, nursing bottles, and so on. Although they come in a range of shapes, there are certain sizes, finished forms, and body shapes that are traditionally associated with this kind of container, or the name of the patent medicine or drug store proprietor may have been embossed on the body of the bottle. As only three of these bottles are identifiable by company, they will be discussed according to body shape.

Square Recessed-Panel Bottle

Only one bottle is square with four recessed panels (Fig. 20). The bottle (1T2G4A-4) of pale green glass (5G) is 254 mm high and 67 mm wide. The neck finish is well formed, consisting of a flattened lip 25 mm high, a rounded string rim 5 mm high, and enclosing a bore 16 mm in diameter. The neck tapers from 33 mm at the the base to 25 mm under the string rim. The four recessed panels on the body arch at the shoulder and are 32 mm wide and 130 mm long measured to the top of the arch. The corners are bevelled. Embossed on the front recessed panel is the name

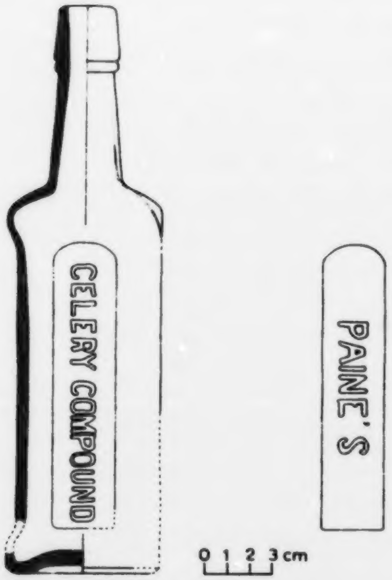


Fig. 20. Druggists' bottle: cross section and profile of a Paine's Celery Compound bottle, 1T2G4A-4.

PAINE'S and on the opposite panel, CELERY COMPOUND. Both are oriented vertically.

The resting point is almost a flat band that encloses a circular impression 50 mm in diameter. There are no markings on the base. A horizontal mould line is located at the heel. Two vertical mould lines on the edge of a bevel extend from the heel line to partway up the neck where the tops of the lines have been obliterated by the action of the finishing tool.

Paine's Celery Compound was introduced in 1872 by the Wells and Richardson Company of Burlington, Vermont (Holbrook 1959: 52) and survived until after prohibition. As this particular bottle is mouth-blown, it was probably manufactured before the mid 1920s.

Rectangular Recessed-Panel Bottles

Rectangular bottles with bevelled corners and recessed panels on all four sides (Fig. 21b) are represented by one partial bottle, one base-body fragment, and one neck with body fragments.

The partial bottle (1T1G6-27) pale aqua (2.5BG) is about 150 mm high. The neck is 37 mm high, 20-21 mm in diameter, with a flattened evenly made lip 7 mm high and 24 mm in diameter, (Fig. 21a). The bore diameter is 11.5 mm. On the front and back the shoulder is short and curves slightly downward to the body-shoulder junction. On the sides the shoulder is flatter and slopes downward toward the body. The tops of the front and back sides are arched (Fig. 21a). The recessed panels on the front and back, formed by two flat surfaces 6.6 mm wide sloping inward from the edge of the bevelled corners, are 30 mm wide and 91 mm high at the arched centre. The side recessed panels are 6 mm wide and the bevelled corners are 6.5 mm wide.

The base, 53 by 29 mm, has bevelled edges 2 mm wide that lead up to a flat area 4 mm wide on the body. On the slightly concave basal surface is embossed the number 51 (Fig. 21c) which is surrounded by two faint, irregular, and off-centre oval impressions.

Two vertical mould lines beginning at a horizontal mould line on the upper edge of the basal bevel extend almost to the lip where they have been obliterated by the action of the finishing tool.

The base-body fragment (1T2G5-33) is essentially the same as the above base although it appears to be slightly longer. The embossed number on this base is 112 and it too is enclosed in a faint, irregular impressed oval.

The neck and body fragments (1T1F1-1 and -2) are of clear glass, but are essentially the same form as the partial bottle. The lip is 6 mm high, 24 mm in diameter, and evenly formed with a flattened profile and flattened upper and lower surfaces. The neck is 32 mm high and 21-23 mm in diameter. Two vertical mould lines extend only partway up the neck as the rotating action of the finishing tool has obliterated the upper portions. The body fragments have a corner bevel 8 mm wide and a horizontal mould line around the upper edge of the basal bevel.

These three bottles probably date from the late 19th or early 20th century.

Rectangular bottles in which not all of the sides have recessed

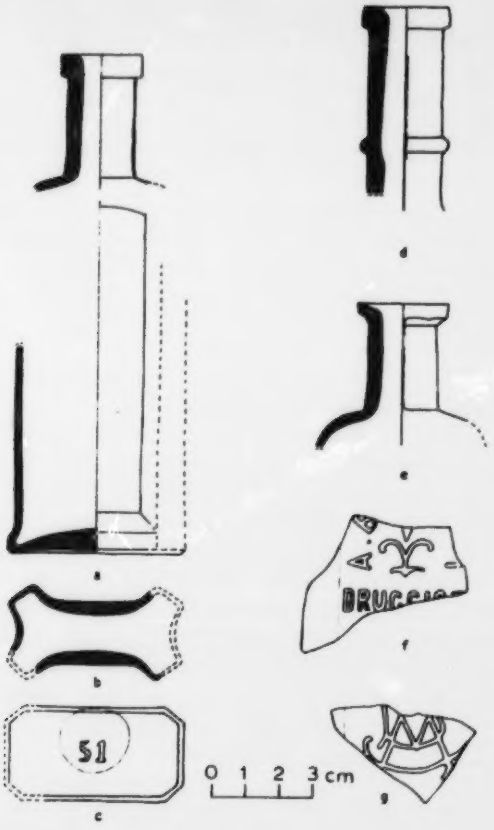


Fig. 21. **Druggists'** bottles: a, profile and cross section of a rectangular-panelled medicine bottle, 1T1G6-27; b, horizontal section of a rectangular-panelled medicine bottle, 1T1G6-27; c, basal view of a rectangular-panelled medicine bottle, 1T1G6-27; d, cross section and profile of a medicine bottle neck, 1T2G5-34; e, cross section and profile of a medicine bottle neck, 1T2G4A-18; f, side view of lettering on a medicine bottle, 1T2G4A-21; g, side view of lettering on a medicine bottle, 1T2G5-27.

panels are represented by a body fragment and by a base fragment.

The body fragment (1T1X1-34) of pale green glass (2.5G) is a narrow recessed lateral panel. In vertical orientation the letters [PAI]N KILLE[R] are embossed on the panel. The letters are rather crude printed capitals 7 mm high. The sides of the bottle meet in rounded bevelled corners with the front side being flat. A vertical mould line is located on the edge of one of the bevels.

This is a fragment of a Perry Davis Vegetable Pain Killer bottle. The product was introduced in 1839 and is still available from the Davis and Lawrence Company of Hamilton, Ontario.

Even though the bottles are now machine-made, the design of the bottle has remained essentially the same since it was introduced in the early 1850s, although the lettering size and distinctness change considerably. As no work has been done on the changes as yet, the dating cannot be precise. Perry Davis Pain Killer has been carried all over the world (Holbrook 1959: 149-156) and is frequently found on Canadian sites.

The base-body fragment (1T1X2-79) of clear glass has one flat frontal side perpendicular to the base and one recessed side. The basal edge is bevelled slightly (3.3 mm) on its exterior edge and strongly (5 mm) on its basal side. The basal surface is flat and reflects the rectangular shape of the basal edge. As the bottle appears to have been mouth-blown, it probably dates from the late 19th or early 20th century.

Quadrangular Bottles with Bevelled Corners

Quadrangular bottles with bevelled corners are represented by three body fragments, all with embossed lettering. The first (1T2G4A-21) of clear glass has a bevelled corner 14 mm wide with a side about 43 mm wide. This side has in horizontal orientation an embossed inscription (Fig. 21f) of A.B arched over DRUGG[IST]. The second fragment (1T2G5-27) has an unidentifiable embossed monogram (Fig. 21g) on one side. The third fragment (1T1K2A-21) of clear glass has a bevel 7 mm wide with a vertical mould line in its centre. Each of the two sides present that are joined by the bevel have an embossed E in a vertical orientation. Dating for all three of these fragments is not known.

Quadrangular Bottles with Rounded Corners

Quadrangular bottles with rounded corners are represented by one body fragment (1T1X2-69) of clear glass. The flat sides, at right angles to each other, meet in a broadly curved corner on one side of which is a vertical raised line perpendicular to a series of horizontal short lines 5.5 mm long and 2 mm apart. The short lines are probably graduations. Again, dating is difficult or impossible.

Necks

In the sample are two necks usually found on either square or rectangular bottles although no body fragments are associated with them. The first of these (1T2G4A-18) is a clear glass neck 31 mm high and 20-22 mm in diameter from lip to base. The neck-shoulder junction is abrupt and the shoulder slopes slightly downward toward the body. The lip, 6 mm high and 27 mm in diameter, is slightly everted with a slightly uptooled profile (Fig. 21e). The bore diameter is 11 mm. This lip resembles the "Extract lip" in Putnam (1965: 20) which is a reprint of a 1911 Illinois Glass Company catalogue put out "in an attempt to unload all their old hand blown stock and use up their moulds" (Putnam personal communication). Two vertical mould lines go up the neck to the lip which was formed by a finishing tool. The neck dates from the late

19th to early 20th century.

The second neck (1T2G5-34) in clear glass is the kind known as a "Ball neck" (Putnam 1965: 47, 48, 50). The neck is cylindrical with a neck ring (26 mm in diameter and 5 mm high) located 32 mm below the base of the lip. Below this ring the neck flares out into the shoulder. From the bottom of the ring to the top of the lip the piece measures 43.5 mm. The lip is flat, 7 mm high, 26 mm in diameter, and has a flat upper surface (Fig. 21d). It resembles the "Packer lip" in Putnam (1965: 20). Two vertical mould lines extend up onto the lip where they have been partially obliterated by the action of the finishing tool. The neck dates from the late 19th to early 20th century.

Cylindrical Bottles

Cylindrical druggists' bottles are not as common as the quadrangular ones; however, there are two examples of the former from the site.

The first of these (1T2E2-1009) is of dark brownish-yellow glass (10YR). The neck is short (27 mm) and 20 mm in diameter. The lip is rounded with a flat upper surface (Fig. 22a), 5 mm high and 25 mm in

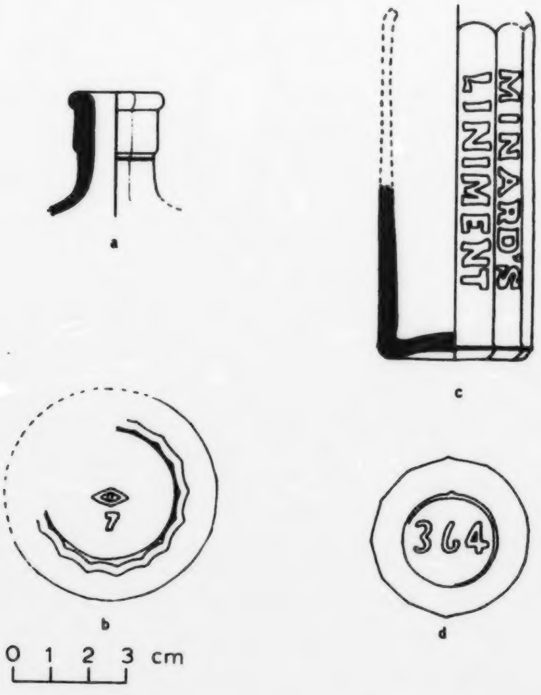


Fig. 22. Druggists' bottles: a, cross section and profile of a bottle neck, 1T2E2-1009; b, basal view of a bottle base, 1T2E2-1009; c, cross section and profile of a Minard's Liniment bottle, 1T1M1-41; d, basal view of a Minard's Liniment bottle, 1T1M1-41.

diameter. The string rim is flattened, 22 mm in diameter and 11 mm high. The bore is 12 mm high. The resting point is a flat band with a scalloped edge on the basal side (Fig. 22b). Just inside the scalloping is a circular mould mark. The basal surface is slightly raised but is reasonably flat. In the centre of the base is an embossed I in a diamond over the figure 7. The diamond I was first used in 1915 by the Illinois Glass Company of Alton, Illinois. This company merged with the Owens Bottle Company in 1929 to become the Owens-Illinois Glass Company (Scoville 1948: 101). Therefore, the bottle was probably manufactured between 1915 and 1929.

The second of these (1T1M1-41) is of pale blue-green glass (2.5 BG). It does not have a true cylindrical body as three-quarters of the body area bears eight vertically oriented panels 11 mm wide which extend from the shoulder to the base. The remaining portion of the body is curved and smooth. In a vertical orientation on the two central panels are the words MINARD'S and LINIMENT (Fig. 22c). The body is 90 mm high and 41 mm in diameter. The shoulder is slightly concave and bears the embossed number 364 inside a circular mould mark 24 mm in diameter (Fig. 22d). Two vertical mould marks extend upwards from a horizontal mould mark just above the heel.

Minard's Liniment bottles were being produced in Trenton, Nova Scotia, in the 1890s (Vienneau 1969: 19, 21). They were also produced in the United States (Tibbits 1964: 87) although no date is mentioned in the source.

Nursing Bottles

Nursing and feeding bottles come in a great variety of shapes but both examples from the site were designed to lie on their sides with the body arching on the opposite side (Fig. 23d); however, the similarity goes no further than this.

The first bottle (1T1E3-2) is amethyst-coloured glass (7.5P). The arched side has embossed lettering HAM Co NY, SEPI and a graduated scale (Fig. 23c). The graduations are marked 1, 2, 3, 4, 5 with decreasing distances between the marks because of the shape of the bottle. Viewed from this side the bottle appears to be ovoid. The part of the bottle that would normally be the base has a short neck (8 mm high and 17 mm in diameter) with a V-shaped lip that is 4 mm high and 20 mm in diameter enclosing a bore 11 mm wide. Two mould lines are located on the narrow ends of the oval but they end just before this neck.

The bottle resembles the Milky Way nursing bottle advertised in a Dominion Glass Company catalogue (Stevens 1967: 158; Fig. 23d). The colour suggests that it was manufactured before the end of World War I.

The second bottle (1T1F2-3 and 1T1E4A-1) is represented by a large somewhat heavy neck-shoulder fragment and a comparatively light body-base fragment which can not actually be joined together; however, as other artifacts in these two lots cross-mend and as the glass in both fragments is similarly bubbled and has a faint pinkish cast, they probably are fragments of the same bottle.

The neck-shoulder fragment consists of an interior threaded finish, a round string rim, and a shoulder contour which suggests an ovoid body

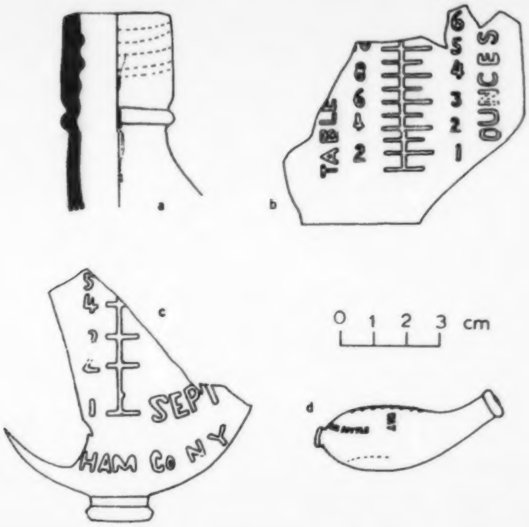


Fig. 23. Nursing bottles: a, cross section and profile of a bottle neck, 1T1E4A-1; b, side view of a bottle body with embossing, 1T1F2-3; c, side view of a bottle with embossing, 1T1E3-2; d, reconstruction of a Milky Way nursing bottle from Stevens (1967: 158).

with one flattened and one arched side (Fig. 23a). The base-body fragment has a distinct slightly concave base and a slightly concave "back" side. The basic shape appears to be ovoid. This particular bottle could either lie on its side or stand upright.

The interior thread begins slightly below the flat irregular lip edge and continues about 27 mm. The thread is coarse and makes three spirals. The bore is 22 mm in diameter. On the exterior the finish slopes slightly outward and is pinched in before the rounded string rim that is located 28 mm below the lip edge and is 5 mm high and 35 mm in diameter. Below the string rim the neck is 29-30 mm in diameter but almost immediately it swells out into the shoulder.

On the body fragment is an embossed graduated scale with the left side marked TABLE[SPOONS] and the right side OUNCES (Fig. 23b). On the tablespoon side the graduations are of even length (7 mm) and are marked 2, 4, 6, 8, 10. On the ounces side the graduations, of alternating long (9 mm) and short (5 mm) lines, are marked 1/2, 1, 2, 3, 4, 5, 6. From the fragment it appears that the body becomes considerably larger than the base.

No mould line is apparent on the base-body fragment, but two vertical mould lines on the ends of the ovoid body extend up onto the finish where they are obliterated and slightly spiralled about halfway between the lip and the collar.

Patents for finishing tools capable of forming internal threads in the bore began to appear in Great Britain in the 1840s and in the United States in the 1850s. A stopper with corresponding threads would be used to close the bottle. The bottle would date from the mid-19th to early 20th century.

Food Preservation Jars

The art of food preservation has a long history; however, for the purposes of this report only certain important developments need be mentioned. The first of these is Nicholas Appert's sealed cooking process, using corks as closures for glass jars, developed in the first decade of the 19th century (Lief 1965: 6, 7). The second is the Mason jar, patented in the United States in 1858, that had a mould-blown threaded finish with the top of the lip ground off to make an even surface that would not distort or damage the threads. Because the ground lip was not air-tight, the jars had to be sealed on the shoulder or just below the lip (Toulouse 1969a: 393, 394). During the 60 years following Mason's patent an astonishing number of closures were patented (Toulouse 1969a: 398-411).

The eventual standardization of finishes was a direct result of the accuracy of the glass blowing machines. As discussed previously, machines for manufacturing jars began to be widely used in 1892-93. In 1915, the bead seal (Fig. 25a), used on modern threaded jars, was introduced and in 1924 the continuous thread finish became standardized across the industry (Toulouse 1969a: 394).

Naming this category presented some difficulties. The jars were designed to store and preserve food, but they were marketed for two different reasons. Some jars were intended for the home canning of fruit and vegetables, while others, called wide-mouth packers, were sold as commercial packages already containing food. In most cases they are indistinguishable from one another unless embossing on the jar clearly indicates its purpose. The following discussion will deal first with known fruit jars and covers the remaining jars will be discussed by finishes and then bases.

Fruit Jars

Two fruit jar companies are represented at Yuquot, Ball Brothers and A.H. Kerr and Company. Only one Ball fruit jar is represented (1T2M1-25). Fragment 1T1M1-52 may also be part of this jar. Fragment 1T2M1-25 has a small part of the word "Ball" in script and underlined. The letters are triangular and stippled. The second fragment (1T1M1-52) appears to have [SP]EC[IAL] over [WID]E M[OUTH] in printed capitals (Fig. 24a). Fragments of beaded continuous thread finishes (1T1M1-45 and -46 and 1T2M1-13; Fig. 25a) are found in association with the above fragments. If all these fragments do belong to one jar, it is probably an example of the Ball Special Wide Mouth dating about 1920 to 1930 (Toulouse 1969a: 40).

The A.H. Kerr Company is represented by at least three and possibly four fruit jars. The first of these (1T1A7-337 and -946 and 1T1A2-151), in clear glass, has a rounded square body with embossed lettering. A reconstruction of the lettering, taken from Toulouse (1969a: 170),

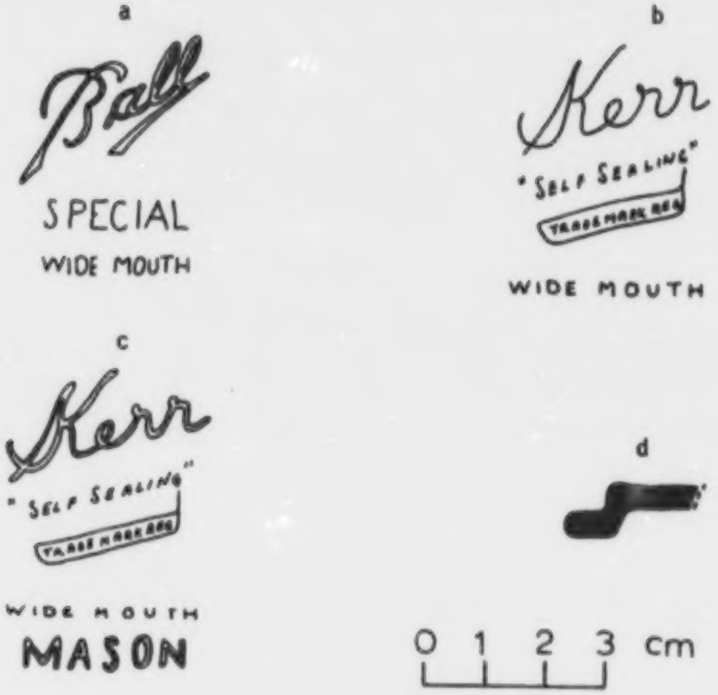


Fig. 24. Fruit jars: reconstruction of lettering based on Toulouse, a, 1969a: 40; b, 1969a: 170; c, 1969a: 171; and d, profile of a fruit jar lid, 1T2J1-15.

appears in Fig. 24b. This jar may be an example of the Kerr Self Sealing Wide Mouth fruit jar, but the body shape in Toulouse is circular rather than rounded square.

A base made up of several fragments from two adjacent suboperations (1T1A9-397, 1T1A4-244X, 1T1A5-299X, 1T1A1, and 1T2A2) may belong with this body. Embossed lettering on the base may be AHK or HHK. AHK was a mark adopted by the Kerr Company in 1944 (Peterson 1968: 48). Although not enough of the body is present to permit a precise description, the base appears to be circular rather than rounded square. It will be discussed more fully in the base section below.

The body fragments are also associated with examples of beaded, continuous thread finishes (Fig. 25a; 1T1A1-14, 1T1A3-227, 1T1A4-239, and 1T1A5-290). Dating this jar on the basis of the lettering places it about 1920-40 (Toulouse 1969a: 170), but if the base does belong to it and if basal lettering is a Kerr trademark, the jar dates post 1944 (Peterson 1968: 48).

The other two Kerr jars are represented by the fragments 1T1K1-11, 1T1K2A-18, and 1T1X1-49 (Fig. 24c). They appear to be examples of the Kerr Self Sealing Wide Mouth Mason (Toulouse 1969a: 171). Again, a base similar to the one mentioned above was found in association with the body fragments (1T1K2A-13). As the only two examples of these bases occur with Kerr body fragments, they probably were manufactured by the A.H. Kerr Company. An example of the threaded band finish occurs in 1T1K1-13. The date of this jar is probably the same as that of the first Kerr jar.

The following body fragments of clear glass bear embossed lettering which may or may not be associated with fruit jars: 1T1A2-151, 1T1A7-337, 1T1J2-7, -8, and -9, 1T1K1-11, 1T1K2A-18, 1T1X1-49 and -50, 1T1X2-72, 1T2L1-13, 1T2M1-25 and -40, 1T3B1B-8 and -10.

Fruit Jar Lid

There is one example of a fruit jar lid (1T2J1-15) in clear glass (Fig. 24d). The upper recessed surface has the embossed lettering [CAN]ADA. The lid is about 90 mm in diameter and 9 mm high. The part inserted into the mouth of the jar is about 78 mm in diameter.

Jar Finishes

The jar finishes are represented by continuous and interrupted threads, by a beaded finish, and by four unidentified finishes.

Continuous thread finishes. The commonest finish is the shallow continuous thread (C.T.) with the bead seal. It consists of a single projecting glass ridge which spirals in a clockwise direction and circumscribes the finish about 1 1/4 times (Fig. 25a, b). The pitch of the thread varies but each termination of the thread is V-shaped (Fig. 25b). Below the thread a bead, or collar (string rim), circumscribes the finish once. It acts both as a sealing surface and as a place for the glass-blowing machine to grasp the jar without distorting the threads (Toulouse 1969a: 394). The bead varies in distance from the top of the lip: 9 mm (three examples), 10 mm (one example), 11 mm (one example), 14 mm (one example), 15 mm (two examples), 16 mm (six examples), and 17 mm (two examples). Different beads also vary in height from 3 to 6 mm and vary in the amount they project from the finish. Some protrude no more than the threads (Fig. 25b); others protrude as much as 5 mm (Fig. 25a). The mouth diameters vary from about 60 mm (two examples), 70 mm (two examples), 75 mm (two examples), to 80 mm (4 examples).

There is virtually no neck on these fragments as the outcurve for the shoulder usually begins almost immediately below the collar (Fig. 25a, b). Horizontal mould lines are found at the inner and outer lip edge and below the collar. Two of the finishes have an embossed letter A and one has an embossed number 51 on the finish between the collar and the thread (Fig. 25a).

The following fragments, in clear glass unless otherwise indicated, have a shallow continuous thread, beaded finish: 1T1A1-14, 1T1A3-227, 1T1A4-239, 1T1A5-290, 1T1K1-13, 1T1L1C-36, 1T1J1-16 (7.5G), 1T1M1-45 and -46, 1T1X1-35 (2.5G), 46 (amethyst) and -48, 1T1X2-55, -61 to -63, 1T2J1-11, -14, and -16, 1T2J2-31, 1T2K1-28 and -29, 1T2K2A-22, 1T2L1-6 (10G) and -9, 1T2M1-13. These fragments represent at least seven vessels.

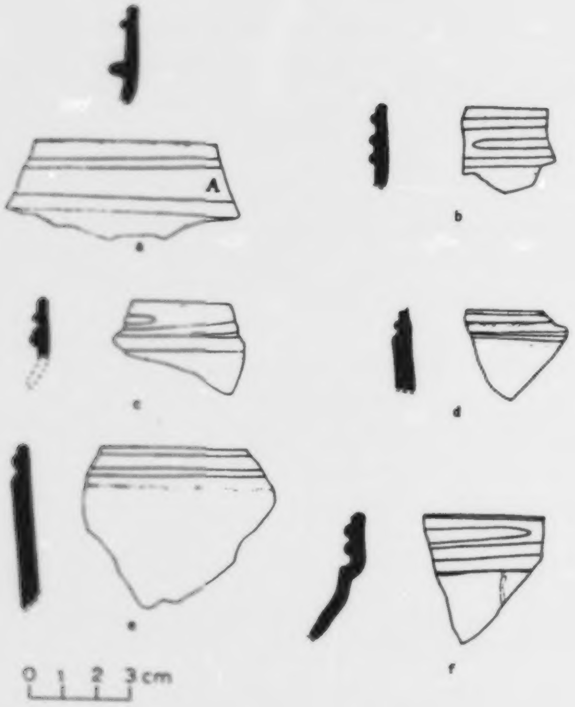


Fig. 25. Continuous thread finishes: cross section and plan view of beaded continuous thread finishes: a, 1T1A5-290; b, 1T1X2-62; cross section and plan view of continuous thread finishes: c, 1T1J1-15; d, 1T1H4-9; e, 1T1J1-6; f, 1T2J2-28.

The beaded seal was developed about 1915 (Toulouse 1969a: 394) so these jars would date after its introduction.

The second style of continuous thread finish (1T1J1-15) consists of a shallow continuous thread in which the lower end of the thread merges with the collar (Fig. 25c). The top of the lip is rounded with mould lines on both edges and a horizontal mould line below the collar. The finish is 14 mm high with a bore about 50 mm in diameter. After a short neck the shoulder slopes outward and downward. On the basis of the mould lines the jar was manufactured after the 1890s.

The third style of continuous thread finish consists of a shallow thread which, in the absence of a collar, appears to merge with the shoulder. The fragment (1T1H4-9), of yellow glass (2.5Y), has a flat-topped lip with a sharp mould line on its inner edge (Fig. 25d). The thread is 2.5 mm wide and is rounded, but has a flat upper surface. Beginning 6 mm below the rim is a short rounded shoulder about 3 mm wide with a horizontal mould line where it meets the body. The mouth diameter is about 50 mm. On the basis of the mould lines, the jar was manufactured after the 1890s.

The fourth style of continuous thread finish (1T1J1-6) has a thread 5 mm wide spiralling in a clockwise direction. The diameter of the mouth and body are the same, about 100 mm. The lip is slightly rounded with a mould line around its inner edge. Eight mm below the threading is a rounded projection which is partly shoulder and partly a lower guide for the screw top. It slants downward from right to left (Fig. 25e). At the join of the cylindrical body with this rounded shoulder is a distinct horizontal mould line. The glass has a purple tint (10PB) which indicates that it was manufactured before the end of World War I. The mould lines indicate machine manufacture after 1892.

The following finishes have a double row of threading on the fragment. This does not mean that they are either shallow (1 1/2 turns) or tall (more than 1 1/2 turns) continuous threads; there is simply not enough of the finish present to be sure one way or another.

The first of these fragments (1T2J2-28) appears to have at least a 1 1/2-turn thread. The threading is 4 mm high with a V-shaped upper termination (Fig. 25f). There is no collar as such, but below the second row of threading is a short horizontal step followed immediately by a larger rounded step which slopes downward and outward. A diffuse vertical mould line begins at this step and extends downward on the fragment. The top of the lip is rounded with a distinct mould line on the exterior edge. The bore is about 42 mm in diameter, the finish is 16 mm high. The glass has a faint aqua tinge (10G). The mould lines are unusual enough to suggest that this may be an early example of a marchine-made jar which would date it as late 19th or early 20th century.

The second finish (1T2E2-1041 and 1T2B1A-39) consists of threads 2.5 mm wide and 2.5 mm apart. At 18 mm below the top of the lip is a slightly rounded shoulder-collar distorted by a horizontal mould line in its centre. In profile the sides of the jar extend vertically downward from the collar (Fig. 26a). On the interior of the mouth is a ledge, such as is found in milk bottles, called a "cap seat." The mouth diameter is about 55 mm. The jar was probably manufactured in the late 19th or early 20th century.

The third finish (1T1E3-5 and -6) has at least a 1 1/2 turn with the lower end of the threading merging into the collar. The threads are 3 mm wide and 2.5 mm apart. The collar is V-shaped (caused by a horizontal mould line) with a slightly rounded extension below it (Fig. 26b). The mouth diameter is about 60 mm. A horizontal mould line is located on the interior edge of the lip. Although both fragments appear to belong to the same vessel, one (1T1E3-5) is pale purple (7.5P) and the other is clear. The difference in colour is probably due to a difference in the length of exposure to the sun. This jar was probably manufactured after 1892 and before the end of World War I.

The fourth finish (1T2K3A-1) has threads 5 mm high and 2 mm apart. There appears to be a very short shoulder 15.5 mm below the top of the lip (Fig. 26c). The top of the lip has been ground flat, but is rough and chipped. A distinct but diffuse vertical mould line extends downward from the lip and there may be a horizontal mould line at the base of the finish. The grinding of the lip, standard practice after the Mason patent in 1858, ceased soon after the utilization of the semi-automatic jar machine in 1892 (Lief 1965: 21).

The fifth finish (1T2D5-2226), which appears to be from a large jar, has very small threads 1.4 mm wide and 1.0 mm apart. The threading

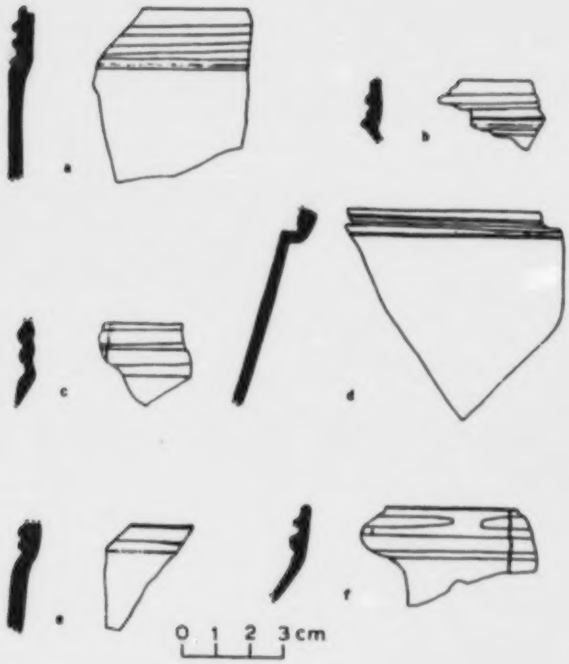


Fig. 26. Threaded finishes: cross section and plan view of continuous thread finishes: a, 1T2E2-1041; b, 1T1E3-6; c, 1T2K3A-1; d, 1T2D5-2226; e, 1T1X1-47; cross section and plan view of an interrupted thread (lug type) finish: f, 1T1X1-45.

seems to go in a counterclockwise direction and merges with the shoulder. The mouth diameter is about 70 mm and the finish is 7 mm high. There is no collar. The shoulder, 3 mm wide, juts out abruptly as a flat surface and then turns abruptly to the body (Fig. 26d). Horizontal mould lines occur on the inner and outer edge of the lip and on the surface of the shoulder very close to the finish. The jar dates after 1892 but the terminal date is not known.

The sixth finish (1T1X1-47) is incomplete. The thread appears to merge with the collar (Fig. 26e).

Interrupted thread finish. The variation of the interrupted thread represented in these jars is the "lug finish." A series of downward sloping evenly spaced lugs, usually three or four, forms the finish. The closure is turned in a clockwise direction, either for 1/3 or 1/4 turn depending on the number of lugs. Each lug has a form of brake such as a downward projection of glass at the lower end of the lug or the merging of the lugs with the shoulder. Lug type closures were introduced as early as 1863 and are still in use today (Lief 1965: 13, 40-41).

The fragments with lug type finishes (1T1X1-45, 1T1H4-6, 1T1K1-14, and 1T1H3-8) represent one or two vessels. The lugs are 3 mm high with the upper surface equidistant from the lip and the lower surface slanting downward toward the brake. The brake, 30 mm from the beginning of the lug, is a short vertical projection connecting the lug to the collar (Fig. 26f); however, the lug does not stop at the brake, as two of the fragments also have a counterclockwise thread that extends 13 mm to the left of the brake. There is an 8.5-mm space between the beginning of the clockwise and the counterclockwise thread (Fig. 26f). The presence of this counterclockwise thread is difficult to explain. Below the threads, 9 mm from the lip, is a 4-mm high collar with a flat top. The mouth diameter is about 60 mm. Horizontal mould lines are found on the inner and outer lip edges and below the collar and a vertical mould line extends up the finish to the mould line at the outer lip edge.

The jar dates after 1892 and is probably recent.

Beaded finish. The beaded finish consists of a broad band of glass (resembling a string rim) below the lip over which a closure is attached. A great variety of closures have been patented to fit this sort of finish, from spring clips (Toulouse 1969a: 473-82) to the modern vacuum seal (Glass Manufacturers Federation n.d.: 30).

The finish is represented by at least two jars (1T1K1-1, 1T1K2A-14, 1T1X2-64, and 1T3A1-37). The mouth is 70 mm in diameter. A rectangular band of glass 6 mm high, about 82 mm in diameter, and projecting outward 3 mm is located 4 mm below the lip (Fig. 27a). Below the band is a flat area 14 mm high from which the glass curves outward and downward in a "short" shoulder. A horizontal mould line 9.5 mm below the band appears as a small ridge. There is a horizontal mould line on the inner edge of the lip 1.5 mm below its outer edge. This finish probably dates after

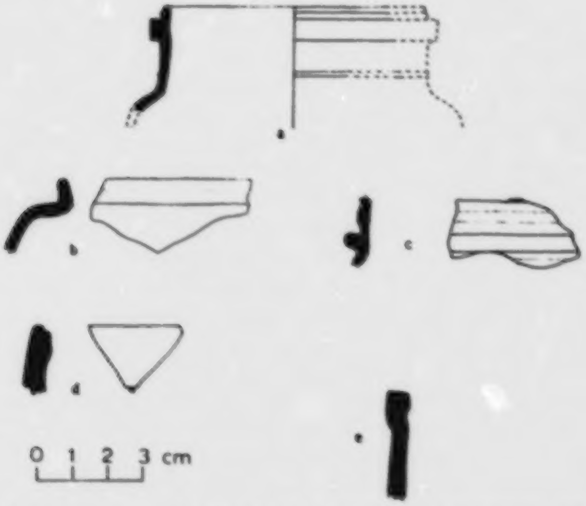


Fig. 27. Miscellaneous jar finishes: a, cross section and profile of a beaded finish, 1T1K1-1, 1T1K2A-14; cross section and plan view of unidentified finishes: b, 1T1L3B-27; c, 1T1X1-35; d, 1T1X1-36; e, 1T1G4-9.

the introduction of the dry steam vacuum process, patented in the United States in 1929 (Lief 1965: 32-3).

Unidentified finishes. Four of the finishes are unidentified. The first of these (1T1L3B-27) has a flaring mouth in which the narrowest part of the neck is at the shoulder (Fig. 27b). It is about 80 mm in diameter at this point. The finish is 6 mm high and slants outward. The lip, about 84 mm in diameter, is rounded with a slight thickening in the glass to a point 3 mm below the top of the lip. The shoulder is flat with a rounded shoulder-body junction. Horizontal mould lines are located on the interior surface at the point of minimum diameter and on the exterior on the lower edge of the thickened lip. The slightly everted finish suggests that the closure would be held in place by a vacuum or a centre pressure cap (Glass Manufacturers Federation n.d.: 29, 31). The mould marks are unusual, but were probably made by a machine which would date the finish as post 1892.

The second finish (1T1X1-35) consists of an elongated rounded collar 5 mm high located 10 mm below the lip. Above the collar is a thickening in the glass which thins toward the lip (Fig. 27c). It is not a distinct entity but, nevertheless, probably acts as a holding device for the closure. This may be a type of a vacuum side-seal pry off, patented in 1925 (Lief 1965: 32). The horizontal mould line on the exterior lip edge and below the collar indicates a post-1892 manufacturing date.

The third finish (1T1X1-36) of pale green glass (2.5G) has a vertically straight external profile that turns abruptly inward 17 mm below the top of the lip. There is a cap seat 1 mm below the flat-topped lip (Fig. 27d). There are no visible mould marks but faint horizontal lines suggest that a lipping tool was used. The jar probably dates from the late 19th or early 20th century.

The fourth finish (1T1G4-9) of slightly purple glass (7.5P) consists of a flat-topped lip 10 mm high with a vertical exterior profile and a rounded lower edge. Inside the mouth about 6 mm from the top of the lip is a groove that was probably used for sealing purposes (Fig. 27e). Below the lip is a cylindrical neck. The purple tint in the glass suggests that the jar was manufactured before the end of World War I.

Jar Bases

All of the bases in this section can be divided into those without stippling on the base and those with stippling.

Only one specimen is without stippling (1T2F1-8). The base is slightly indented and measures 65 mm in diameter. A mould (or baffle plate) mark 45 mm in diameter encircles the base just inside the resting point. Perpendicular to this is a mould line which probably extended vertically onto the body. In the centre of the basal surface is an embossed ring 23 mm in diameter that encircles the number 23 (Fig. 28a). The faint purplish tint in the glass suggests a manufacturing date before the end of World War I and the mould lines a post-1892 date of manufacture.

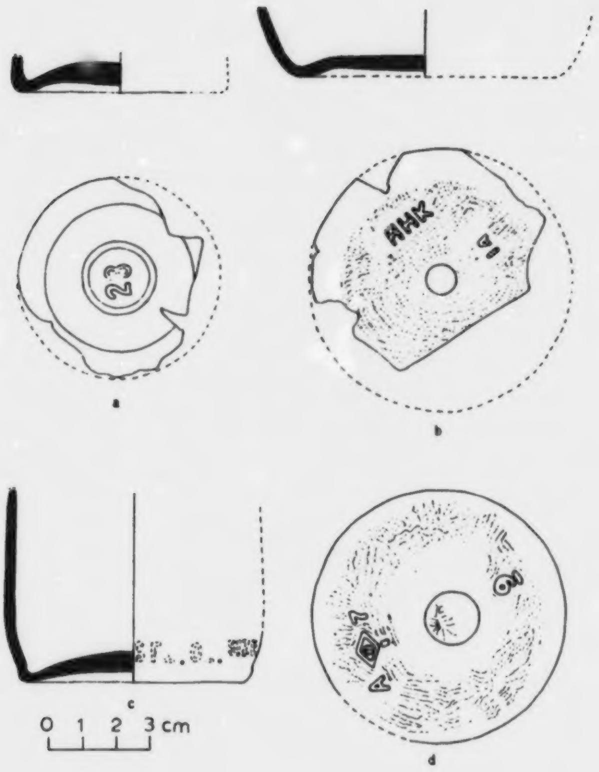


Fig. 28. Jar bases: cross section, profile, and basal view of jar base-body fragments, a, 1T2F1-8; b, 1T1A9-397; c, cross section and profile of a base-body fragment showing embossed lettering, 1T2H2A-14; and d, basal view showing embossed lettering, 1T2H2A-14.

The stippled bases, all in clear glass, are divided into those with lettering near the outer edge of the base and one example with lettering toward the centre of the base. The bases with the markings toward the periphery each have a small, distinct, circular valve mark close to the centre of the base. "It is most often found on wide mouth foods of the 1930s and 1940s and even later" (Toulouse 1969b: 583). These bases will be discussed first.

There are two examples (1T1A9-397 and 1T1K2A-13) of the possible A.H. Kerr Company bases already mentioned in connection with the fruit jar fragments. The two bases have the same elements, but are different sizes. The basal surface is slightly depressed and covered with irregular "orange peel" stippling. The stippling disappears toward the centre of the base where a small (9-10 mm in diameter) valve mark is located. A small non-stippled rectangular area toward the edge of the base bears the letters AHK or HHK (Fig. 28b). Base 1T1A9-397 has a second rectangle in the three o'clock position containing the number 14 (Fig. 28b). Base 1T2K2A-13 has the number 12 in the nine o'clock position and the number 51 on a fragment which probably mends with the base. All these numbers face away from the valve mark. The larger base (1T1K2A-13) has a base diameter of about 100 mm and also appears to have an encircling mould line on the resting point. The other base (1T1A9-397) is about 95 mm in diameter. The extant portion of the body suggests that the jar had an inswept heel; "insweep" is used to describe the tapering of the last inch of the body toward the base. This area, called the "Murgatroyd belt," is the weakest in a container and the insweep lessens the stresses caused by the rigid support from the base section (Phillips 1960: 5). The insweep began to be used in the 1930s (Wyatt 1968: 22) and can be found on many contemporary containers.

If the letters on these two bases are AHK, the jars were produced after 1944 by the A.H. Kerr Company of Los Angeles, California (Peterson 1968: 48). As no trace has been found of a company using HHK as a trademark and as these bases were also found in association with Kerr fruit jars, they probably were manufactured by the Kerr Company.

As the next two jar bases (1T2H2A-14, 1T2A2-17 and -22) are similar they will be discussed together. Both have random "orange peel" stippling, the valve mark, and horizontal lettering on the insweep (Fig. 28c).

Base 1T2H2A-14 is 69.5 mm in diameter and 3 mm deep. The valve mark, 16.5 mm in diameter, is off-centre and contains no stippling. Embossed figures appear on one side of the base A D 7 and on the opposite side is the number 9 (Fig. 28d). A depression encircling the heel about 3 mm above the resting point may be a horizontal mould line. Traces of a vertical mould line beginning at this horizontal line are so faint as to be almost non-existent. The body diameter above the insweep is 75 mm. On the insweep about 7 mm from the base is horizontal lettering C... 16 FL. O[Z]. SIZE. The lettering 16 FL. OZ. is 6 mm high, SIZE is 4 mm high (Fig. 28c).

The insweep on the jar and the valve mark all indicate a post-1930s manufacturing date. The Dominion Glass Company coding is not standard. Although the A is in the position usually reserved for the month, it is not the usual month marking. It may refer to January or indicate that the ounces are American. The 7 probably refers to 1937 or 1947; the D indicates that the jar was made in the plant at Redcliff, Alberta (Rosewarne personal communication).

The second jar (1T2A2-17 and -22) has a valve mark 10 mm wide in the centre of the base. Not enough of the base is present for there to be any other markings; however, on the body fragment there is a distinct vertical and a horizontal mould mark and the embossed lettering SIZ[E]. The letters are 4 mm high. The dating on this base is probably similar to the above.

The base 1T1X2-81 has concentric rows of small indentations that begin at the resting point. The valve mark is 10 mm in diameter. To the left of the mark is an embossed 10 that is 6 mm high and sideways to the baffle mark (Fig. 29a). Again, the dating is similar to the above.

The base with the numbering concentrated in the centre (1T1M1-47) is 64 mm in diameter. The resting point is a downward projecting ridge (Fig. 29b). About 6 mm above this, on the insweep, is a horizontal mould line. The basal surface is covered by rows of tiny embossed dots except for the area in the centre which contains the code lettering (Fig. 29c). The baffle mark is large, 50 mm in diameter, and eccentric.

On opposite sides of the jar two faint vertical lines go up toward the body; these are from the parison mould, not the final blow mould.

The markings on the base show that this jar was made by Dominion Glass Company in January-February in 1945, 1955, or 1965 at Redcliff, Alberta. The V mould numbers are said to have been used soon after World War II (Rosewarne personal communication). Basal fragments 1T1A4-252X and 1T1X2-52 have bases stippled in the same way as this base.

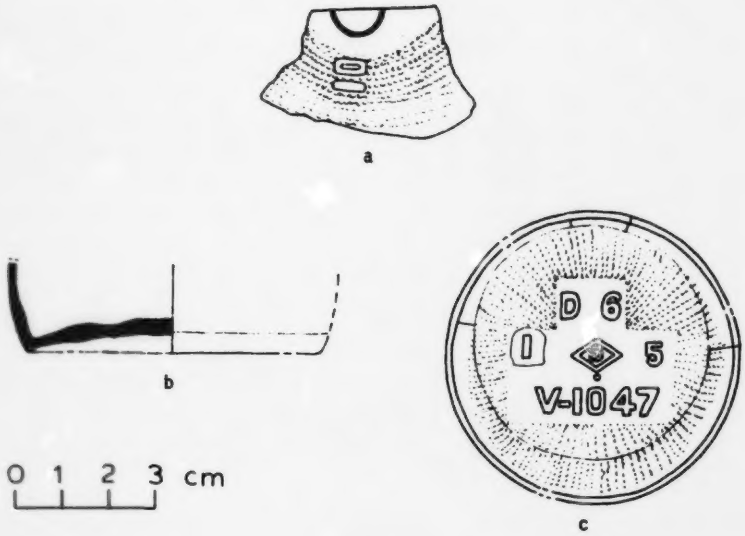


Fig. 29. Jar bases: a, basal view of an embossed base fragment, 1T1X2-81; b, cross section and profile of a base-body fragment, 1T1M1-47; and c, basal view of an embossed base, 1T1M1-47.

Unidentified Containers

The remaining containers are either too fragmentary for identification or the function for the particular shape is not known. The major division is according to the part of the container represented, including whole bottles, neck, body-shoulder, and base fragments. The bottles with cylindrical bodies will be discussed separately from those with flat-sided bodies.

Complete Bottle

There is one complete bottle whose function is unidentified (1T2G3-1381). The bottle, of reddish-brown glass (7.5YR), has a cylindrical body, slightly concave base, embossed lettering on both of these, and a well-made finish (Fig. 30). The bottle is 207 mm high and holds 8 oz. The bore diameter is 16 mm. The lip, 25 mm high, is flattened; the string rim, 4 mm high, is rounded. The neck, 85 mm high, tapers outward slightly and makes an abrupt turn to the rounded shoulder. On one side of the shoulder are the embossed words G.W. ABBOTT & CO., on the other, BALTIMORE. The body diameter changes from 65 mm at the shoulder to 59 mm at the base. The resting point is a flattened band and bears the same inscription as the shoulder (Fig. 30c). The basal surface is concave and 4 mm high. A horizontal mould mark encircles the body 5 mm above the resting point. Two vertical mould lines extend from this line up to the finish where they have been eliminated by the turning of the finishing tool.

It predates 1925 and was probably not made before the last decade of the 19th century. [Note: Subsequent research has established that the Abbott company produced bitters (Watson 1965: 47).]

Necks

Three neck fragments are from containers whose function is not known. The first neck (1T2G4A-7) of pale green glass (7.5GY) is elongated with no distinct curvature where neck and shoulder join. The existing neck height is about 66 mm with a diameter of 26-27 mm under the string rim. The finish consists of an untooled lip with a rounded and uneven top and a flattened string rim 8-9 mm high located 3-4 mm below the lip (Fig. 31a). The bore diameter is 18 mm. As no mould marks are visible, the bottle was probably turned in the mould, a common practice in the late 19th and early 20th centuries (Toulouse 1969b: 532). This bottle was probably used for wine or spirits.

A finish fragment (1T1J1-18) of clear glass consists of a flattened lip 16 mm high. A vertical mould mark on the lip stops at a horizontal mould line on the top surface of the lip. As the mould marks are distinctive of a machine-made container, the bottle was manufactured in the 20th century.

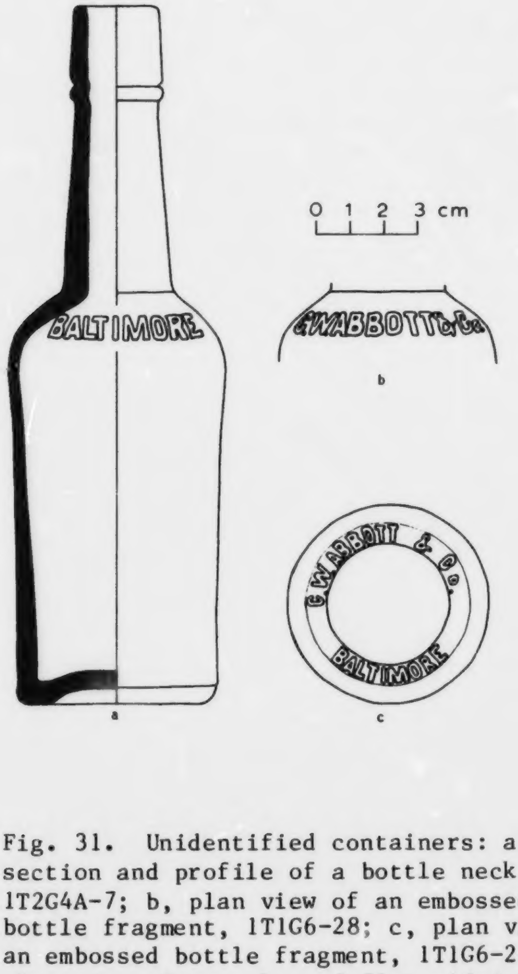


Fig. 30. Unidentified bottle: a, cross section and profile of a bottle of unidentified function, 1T2G3-1381; b, embossed lettering on opposite side of shoulder, 1T2G3-1381; and c, basal view showing embossed lettering, 1T2G3-1381.

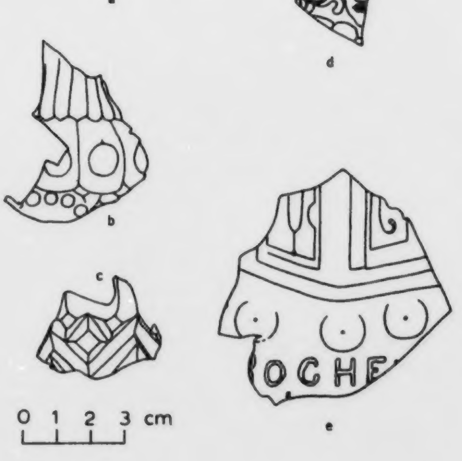


Fig. 31. Unidentified containers: a, cross section and profile of a bottle neck, 1T2G4A-7; b, plan view of an embossed bottle fragment, 1T1G6-28; c, plan view of an embossed bottle fragment, 1T1G6-28; d, plan view of an embossed flat-sided bottle fragment, 1T1F2-1; e, plan view of an embossed flat-sided bottle fragment, 1T3C1-4.

A finish fragment (1T2K2A-27), of red-brown glass (7.5YR), has a collar 5 mm high and a fragment of threading. As the bore diameter appears to be small and the neck is at least 17 mm high, this is probably a fragment of a bottle rather than a jar. Although no mould lines are evident, this piece probably dates from the late 19th or early 20th century.

Cylindrical Body Fragments

A body-shoulder fragment (1T1G6-28) of clear glass has a moulded geometric design (Fig. 31b, c). There are two definite vertical mould lines present. This fragment may be from a cruet or pickle bottle. No dating is possible on the fragment.

Body fragment 1T2G2-27 has a surface bearing a cream-coloured label BOTTLED ONLY BY A over TRY OLD over other (in script). The label is bordered by a vertical, painted line that curves inward at the base. The glass is dark reddish-brown (7.5YR). The container probably dates after the full-scale production of applied colour labelling in the 1930s.

Fragment 1T2L1-19 has the remains of a red and white paper label. Body fragments 1T1K40-2, 1T2F2-30, and 1T2K1-24 have a ghost mould line from the parison mould as well as the regular line from the blow mould. They are 20th century.

One body-shoulder fragment (1T3B1B-14) has mould lines from a three-part mould. This type of mould was patented in England in 1821 (British Patent No. 4623: Ricketts' Improvement in Manufacturing Glass Bottles 1821) and appears to be less common after the third quarter of the 19th century.

A roughly cylindrical body fragment (1T1J2-12) has vertical ribbing about 10 mm wide. The glass has a faint purplish cast (5P) suggesting that it was manufactured before the end of World War I.

Fragments 1T1M1-50, 1T1X1-52, and 1T2M1-24 are from cylindrical bodies and have vertically oriented rounded stippled ribs which are widely spaced on the exterior surface of the glass. The ribs are 5 mm wide and have rounded ends. As the glass is completely clear and free from bubbles, these are probably 20th-century fragments.

Fragments 1T1J2-18, 1T2K2A-28 and -25, and 1T2J1-32 are from the body-shoulder area of a dark brownish-red container (7.5YR). They are decorated by two horizontal bands of raised stippled glass. In the clear space (about 10 mm wide) between the bands is moulded lettering 7 mm high. One fragment has L.W. and the other has ENS. No dating is possible for these fragments.

Cylindrical Base Fragments

The following base fragments have stippled bases: 1T1K1-6, 1T1L2B-2, 1T1X2-80, 1T2K2A-15, 1T2L1-8, 1T2M1-33 and -34, and -35. Deliberate stippling on the base is a 20th-century device to increase the strength of the bottle.

The following three bases have embossed, unidentifiable numbering. Fragment 1T2J1-8 is of clear glass, badly wave-worn, and bears the numbers 3265 over 18 in the centre of the base. It is 20th century. Fragment 1T2J1-9 is of clear glass, has a faintly stippled basal surface and the number 4 near its circumference facing outwards. It also is 20th century.

Fragment 1T1X1-31 is a large thick (7-14 mm) base of pale green (2.5G) glass with a slightly rounded basal edge. A rounded ridge encircles the base inside the resting point. Inside this, facing outward, is the embossed ill-defined number 1536 that is 7-14 mm high. It dates from the late 19th to early 20th century.

The following ten bases are from cylindrical bottles whose functions are unidentifiable. As their basal configurations are all different, they will each be described briefly.

Base fragment 1T1B1-6 of pale green glass (7.5GY) has a rounded basal edge and appears to have a deep kickup. As no mould marks are visible on the fragment, it probably pre-dates the full-scale introduction of automatic machines.

Base fragment 1T2D2B-2 of pale bubbled green glass (2.5GY) is about 70 mm in diameter. A horizontal mould line forms the resting point and a vertical mould line on the body connects with it. The body bulges slightly at the heel. The container is probably late 19th or early 20th century.

Base fragment 1T1J2-13 of bubbled green glass (7.5GY) has a rounded base-body junction with a horizontal mould line forming the resting point. The base, about 55 mm in diameter, curves upward from the resting point to form a shallow concavity. It probably dates from about 1900.

Base fragment 1T2A1-2 of transparent dark green glass (2.5G) has an abrupt base-body junction and a flat resting point 6.6 mm wide. The kickup is dome-shaped and bears no pontil or mould marks. The fragment appears to be from a container blown in a mould. Some fragments are distorted due to contact with heat. The base diameter is about 80 mm. As there are no mould marks, this vessel was probably turned in the mould, suggesting the late 19th or early 20th century.

Base fragment 1T2A2-11 of green glass (7.5GY) has a flattened resting point 10 mm wide and a base-body junction delineated by a horizontal mould line. The kickup is a low dome shape about 11 mm high. The basal diameter is about 60 mm. It is probably 19th or early 20th century.

Base fragment 1T3A1-36, of clear glass, has a rounded basal edge about 70 mm in diameter with the beginning of a dome-shaped kickup. There may be a horizontal mould mark at the resting point of the basal edge. Dating is probably late 19th or early 20th century.

Base fragment 1T2G4A-20 is of clear glass with a faint purple tint. The base is about 70 mm in diameter and has a rounded basal edge leading to a shallow concavity in the base. A horizontal mould mark encircles the body just above the resting point. The colouring suggests a date of manufacture before the end of World War I.

Base fragment 1T2K2A-8 of clear glass has a rounded basal edge with a shallow concavity in the base. The basal diameter is 50 mm. In the base are two indistinct concentric beaded circles measuring 24 mm and 30 mm in diameter. An eccentric mould line 46 mm in diameter encircles the base and a vertical mould line goes up to the body. There may be a horizontal mould line at the base-body junction. As the base was made on an automatic machine, this is a 20th-century bottle.

Base-body fragment 1T1X1-40 of clear glass has a right-angled base-body junction, a flat basal edge, and a diameter of about 40 mm. No dating is possible.

Base fragment 1T1K1-10 of clear glass has a diameter of about 35 mm and a rounded basal edge. There is a distinct horizontal mould just outside the resting point and a vertical mould line going up to the body. No dating is possible.

Flat-Sided Body Fragments

Although the following three body fragments come from containers of undetermined function, they are of interest because of embossing on their surface.

The first fragment (1T1F2-1) of clear glass has two human faces moulded in the body (Fig. 31d). This may be from a children's medicine, food, or milk bottle. No dating has been possible for this fragment.

The second fragment (1T3C1-4) of yellow-brown glass (7.5YR) has a faint embossed design and lettering that may be ROCHE[STER] (Fig. 31e). The fragment suggests a comparatively large flask-shaped container. Again no dating has been possible for this container, although it is unlikely to have been blown in a machine. [Note: Subsequent research has established that this is an example of a Warner's Safe Cure bottle and would date post 1878, the year in which Warner began producing his line of "Safe" medicines (Wilson and Wilson 1971: 95-96, 144).]

The third fragment (1T1X2-71) of clear glass appears to be from a container with bevelled corners. The lettering is FL. 16. The FL. letters are 7 mm high with a triangular cross section. The 16 is 12 mm high with a flattened stippled surface. It is probably from a 20-century bottle.

Bases from Flat-Sided Bottles

There are four bases from some form of flat-sided bottle. Fragment 1T1M2A-27 of clear glass appears to be from a rectangular bottle. On the heel is a distinct baffle plate mark and on the basal surface is a C enclosed in an inverted triangle. This is the mark of the Consumers Glass Company of Canada which was started in 1913 (Stevens 1967: xiv).

Fragment 1T1X2-78 of clear glass is from a rectangular bottle. A horizontal mould mark is at the heel and a large baffle plate mark meanders close to the resting point. On the comparatively flat basal surface is embossed coding. Parallel to the short axis of the bottle and close to the resting point is the number 7675. Parallel to the long axis the lettering is CAN[ADA] over J.B.W [C]O over 5 [O]Z. As the container has obviously been made in a machine, it dates after 1900.

Fragment 1T2E2-26 of pale purple glass is from a rectangular body with rounded ends. The basal surface has a very faint number 2575 embossed on the base. A vertical mould mark is present at the centre of the narrow side and is perpendicular to a mould mark encircling the heel. The colouring suggests the container was manufactured before the end of World War I.

Base 1T1K1-4 and 1T1X2-49 of clear glass represents a flat-sided container. On the basal surface is an eccentric value mark 9 mm in diameter. Embossed numbers 6505 over 2 are also found near the centre of the base. The body slants inward from the heel then slants outward again about 13 mm above the mould line encircling the heel. A horizontal mould line is at the heel. The presence of the value mark suggests a 1930s or 1940s manufacturing date (Toulouse 1969b: 583).

Discussion and Conclusions

The glass excavated at Yuquot accurately reflects the periods of contact between Nootkans and Whites. The first period, from 1778 to 1803, is represented by a few engraved tumbler fragments, a wine bottle neck, and a base fragment. Glassware manufactured during the period when there was little contact (1803 to the late 1800s) is not represented on the site. Some of the fragments have been given a possible date of manufacture as early as the 1820s, but the termination dates always occur either in the late 19th or early 20th century. The third period of contact, which began in the late 1800s and continues to the present, is represented by the majority of glass from the site.

The glass collection is small, representing about 200 separate objects. No detailed vessel count was attempted, partly because fragments of glass objects can be extremely difficult to fit together with certainty and partly because no particular purpose would be served as the excavations were concentrated primarily in one area. There are seldom any more than four or five representatives of any given object similar enough to be grouped together. In many cases there is only one example of each item.

The range of products found on the site is typical of the late 19th and 20th centuries. By the 1870s the predominance of the dark green bottle had given away to a bewildering array of containers for many different products such as medicine bottles, carbonated beverage bottles, and food preserving jars. No one type of container seems to dominate the sample, except perhaps the food preserving jars. Pressed glass proliferated after the discovery in 1864 of a lime glass very similar in appearance to the more expensive lead glass. The identified pressed glass patterns were introduced during the 1880s and 1890s. Lamp chimneys, after the introduction of kerosene in the late 1850s, became very common.

Decoration of the glassware consisted of pressed patterns, engraving (from the late 18th-century period only), and flashing. Labelling of containers was done by embossed lettering on the base and the body, by applied colour labels on the body, and by paper (one example). The labelling on the body tends to pertain to the company using the container; on the base it tends to be the glass manufacturing company.

The identified glassware was of Canadian or American manufacture. The pressed glass patterns were produced by glasshouses around Pittsburg, Pennsylvania; Trenton, Nova Scotia; and Toronto, Montreal, and Hamilton. As the patterns originated in the 1880s and 1890s, it is not surprising to find examples of products from eastern glass factories. Glasshouses in the state of Washington began operating in 1904 (Toulouse 1970: 33), but in Canada the first western glasshouses began in Manitoba and British Columbia in 1907 and in Alberta in 1913 (Stevens 1967: xiv). These glasshouses produced containers rather than tableglass. Most of the identified Canadian containers were manufactured at the Dominion Glass Company plant in Redcliff, Alberta.

The predominance of American and Canadian glass and the almost total absence of any European glassware is probably an accurate reflection of the trade relationship between Canada and the United States, particularly on the west coast. However, one other factor has to be considered. In the United States a great deal of study has been done on pressed glass and on bottles and containers of the late 19th and 20th centuries. In Canada, this sort of work has just begun. Moreover, Europeans have neglected the study of this period and the cheaper forms of glassware in favour of art glass, lead glass, and so on. European glassware may very well be represented on the site, but has not been identified because of the lack of literature on the subject. Only the engraved 18th-century tumbler has been identified as European. The absence of Spanish glass was also disappointing.

The glass was separated according to the function of individual items. This division worked reasonably well as most of the objects were diversified enough in spite of their fragmentary condition to be distinguished from one another. The unidentified glassware consists mainly of small fragments.

The difficulty in using function as the primary division is that it requires a familiarity with what shapes, sizes, and glass colour are associated with what function. Our own cultural background ensures that we have a fair degree of expertise in this matter; however, the division can be difficult for objects that have either disappeared from daily life or are fragmentary.

Function was chosen over a number of other possibilities such as body shape, glass colour, and manufacturing techniques for two reasons. First, combinations of certain body shapes, finish forms, size, and glass colour are associated with certain functions, partly through necessity and partly through tradition. For example, the crown finish is found on beer and carbonated beverage bottles, lamp chimneys are a different shape from drinking glasses, perfume and druggists' bottles are usually smaller then wine and spirits bottles, and beer bottles are usually dark green or reddish-brown. Secondly, a division by function means that the social milieu is more immediately obvious. Buyers purchase a bottle for its contents, a cream and sugar set or a lamp chimney because these are the items they need. After this initial decision, the choice is then made by object or brands according to price, shape, colour, decoration, individual preference, and so on.

In the archaeological context (Dewhirst 1980) the glass comes from the first ten lots (to about 5 ft. below the surface). Only suboperations 1A, 3A, 1F, and 2F have glass in lot 10; however, the depth does not mean that these lots have glassware of the early period as the glass in 1A9, 3A10, and 2F10 is definitely modern. In most of the other suboperations, glass was not found below the fifth or sixth lot.

Crossmends occur among the following lots:

1. 1A1-1A9, 2A1, 2A2, and 2B1A. The identified glassware consists of wine and spirits bottles, carbonated beverage bottles, and food preserving jars. They probably date post 1900.

2. 1E3, 1E4, and 1F2. The glassware is mostly container glass dating from 1870 to the present.

3. 1G3-1G6, 2G3-2G6, 2G4, 1H3, 1H4, 2H1-2H3, and 1J1. The glassware consists of container glass, lighting fixtures, and tableware

dating from 1870 to the present. It also contains one fragment of 18th-century glass.

4. 1J1, 2J1, 2J2, 1K1, 1K2, 2K1, 2K2, 2L1, 2L2, 2L40, and 2M1. This group contains an example of all the functional categories discussed. There is one 18th-century fragment: all the rest of the glass dates from 1870 to the present.

5. 1L2, 1M1, 1M2, 2M1, and 2M2. This group has examples of almost all the functional categories. It dates from about 1870 to the present.

6. 2C4, 2C5, 3C4, and 2D2. This is the group with the engraved tumbler fragments. It is 18th century.

7. 2E2, 2E3, 2F1, and 2F2. The glassware consists of lighting fixtures, marbles, druggists' bottles, and food preserving jars. It appears to date from about 1870 to 1925.

8. 2A1, 3A1, 3B1, and 3C1. The glassware consists of lighting fixtures, wine and spirits bottles, and food preserving jars. It dates from about 1870 to the present.

The assemblage of glassware from the site indicates the diverse nature of glass products available to the consumer. It also appears to be a reasonably accurate reflection of the preferences of the Nootkans at Yuquot. The tableware is of the popular but inexpensive pressed glass of the 1880s and 1890s. The proportion of wine, spirits, and beer bottles to the rest of the containers is perhaps lower than one might expect; however, according to Folan (personal communication) the Nootkans prepare their homemade wine in kegs and do not bottle it. The presence of the 18th-century engraved tumbler fragments, the fancy window glass, the highly decorated lamp font, and the cosmetic jars indicate that the more decorative aspects of European and North American life were available to the Nootkans, whether it was they who used them or the Europeans or North Americans in the village.

Appendix A. Summary of Dating and Glassware by Provenience

Provenience	Tableware	Window glass	Mirrors	Lighting fixtures	Marbles	Lids (misc.)	Unident. glassware	Wine&spir. bottles	Beer bottles	Carbon. bev. bott.	Perf.&cosmet.bott.	Druggists' bottles	Fruit jars	Food preserv. jars	Unident. contents	Unident. sherds	18th century	ca.1825-?	?-ca.1918	ca.1870-ca.1925	ca.1870-?	ca.1892-?	ca.1904-?	ca.1915-?	ca.1930-?
1A1										X			X	X										X	X
1A2										X			X												X
1A3								X					X	X						X				X	X
1A4								X		X			X	X						X				X	X
1A5													X	X										X	X
1A6										X															X
1A7													X												X
1A9													X	X											X
1B1																X		X							
1E2											X	X							X						
1E3														X					X						
1E4												X										X			
1F1												X										X			
1F2					X		X	X				X				X						X			X
1F7										X												X			
1F8						X																			
1G1					X				X																X
1G3									X													X			X
1G4							X	X	X					X					X	X	X	X			
1G5				X				X												X					
1G6	X			X								X				X			X		X	X			
1H1								X												X					
1H3							X			X				X							X	X			X
1H4				X				X						X				X		X		X			
1H5								X												X					
1J1	X								X		X			X		X			X			X	X	X	X
1J2					X								X			X			X			X			X
1K1							X			X			X	X		X						X	X	X	X
1K2	X								X	X		X	X	X						X		X	X		X
1K40																X							X		
1L1	X								X	X				X							X			X	X

Appendix A. (Cont'd)

Provenience	Tableware	Window glass	Mirrors	Lighting fixtures	Marbles	Lids (misc.)	Unident. glassware	Wine&spir. bottles	Beer bottles	Carbon. bev. bott.	Perf.&cosmet.bott.	Druggists' bottles	Fruit jars	Food preserv. jars	Unident. contents	Unident. sherds	18th century	ca.1825-?	?-ca.1918	ca.1870-ca.1925	ca.1870-?	ca.1892-?	ca.1904-?	ca.1915-?	ca.1930-?
1L2				X					X		X					X					X		X		X
1L3	X													X							X	X			
1M1	X	X		X							X	X	X	X		X					X	X	X	X	X
1M2							X									X			X					X	
1X1	X		X	X			X	X	X	X		X	X	X		X	X	X		X	X	X	X	X	X
1X2	X				X	X	X	X	X	X		X	X	X		X			X	X	X		X	X	X
2A1								X								X						X			
2A2							X	X					X	X		X		X		X		X			X
2B1								X						X								X			
2C4	X																X								
2C5	X																X								
2D2	X															X	X					X			
2D5														X								X			
2E1				X																					X
2E2												X		X		X			X			X		X	
2E3				X																					
2F1					X																				
2F2																X							X		
2F4				X																					
2F5							X											X							
2F10										X															X
2G2				X			X				X					X									X
2G3				X				X							X			X		X					
2G4				X				X		X		X				X			X	X	X	X			
2G5	X			X						X		X								X	X	X			
2G6	X			X				X	X		X									X	X	X			
2H2				X				X	X	X				X						X		X			X
2H3				X				X	X											X		X			
2J1	X		X		X		X		X	X			X	X		X		X				X	X	X	X
2J2									X	X				X								X	X	X	X
2K1	X	X	X							X	X			X		X		X			X	X	X	X	X

Appendix A. (Cont'd)

Provenience	Tableware	Window glass	Mirrors	Lighting fixtures	Marbles	Lids (misc.)	Unident. glassware	Wine&spir. bottles	Beer bottles	Carbon. bev. bott.	Perf.&cosmet.bott.	Druggists' bottles	Fruit jars	Food preserv. jars	Unident. contents	Unident. sherds	18th century	ca.1825-?	?-ca.1918	ca.1870-ca.1925	ca.1870-?	ca.1892-?	ca.1904-?	ca.1915-?	ca.1930-?
2K2					X	X		X	X	X	X			X		X	X	X		X	X		X	X	X
2K3														X				X							
2L1									X	X	X		X	X		X						X	X	X	X
2L2				X						X											X				
2L3					X																				
2L40										X														X	
2M1		X		X	X		X	X					X	X		X		X			X		X	X	X
2M2								X												X					
3A1				X				X						X		X					X	X			X
3B1													X			X		X							X
3C1								X								X				X					
3C4	X																X								

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Glass Beads from Yuquot, British Columbia

Karlis Karklins

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Abstract

Archaeological excavations conducted at Yuquot, British Columbia, by W.J. Folan, then of the National Historic Parks and Sites Branch, produced a collecton of 77 glass beads representing 17 distinct types. These were classified using the system developed by Kenneth and Martha Kidd to facilitate future inter-site comparisons of bead assemblages. The beads, primarily large-faceted specimens, are attributed to the late 18th century and the greater part of the 19th century.

Submitted for publication 1972, by Karklis Karklins, National Historic Parks and Sites Branch, Parks Canada, Ottawa.

Introduction

In 1966 William J. Folan, then of the National Historic Parks and Sites Branch, conducted the archaeological investigation of Yuquot, a Nootkan village situated on Friendly Cove at the southern tip of Nootka Island, British Columbia. The main excavation was located near the centre of the village. Another, which was smaller, was located on San Miguel Island, the site of a late 18th-century Spanish gun battery, at the entrance to Friendly Cove. Excavation contexts are described by Dewhirst (1980).

Compared with the number of other glass objects recovered from the Yuquot excavations, beads were relatively scarce. The site yielded a total of 77 specimens of which 67 are drawn and 10 are wound. The beads in these two categories were classified utilizing the system developed by Kenneth and Martha Kidd (1970) and their identifying code precedes the description of each bead type in this report. Bead types encountered that are not listed in the Kidds' type list are marked by an asterisk because they do not yet have type-numbers.

Colour and size notations used in this report correspond to those employed by the Kidds in their system. Colours were designated using the names and codes in the Color Harmony Manual (Jacobson et al. 1948). The equivalent colour code in the Munsell colour notation system (Munsell Color Company 1960) was also provided for the benefit of those who may not be familiar with the manual. The size categories used refer to bead diameter and have the following numerical values: very small, under 2 mm; small, 2-4 mm; medium, 4-6 mm; large, 6-10 mm; very large, over 10 mm. Although Kidd uses "clear" in lieu of "transparent," I used the latter term because I felt it was more descriptive.

A brief survey of the methods employed to manufacture glass beads is presented here to indicate the differences between the beads in the two categories mentioned above.

In the manufacture of drawn beads a long tube is drawn out from a hollow globe of molten glass by two men. After cooling, the tube is broken into short sections to facilitate handling. These are then annealed to strengthen the glass. The tube is subsequently broken into bead lengths by placing it on a sharp, broad chisel set in a block of wood and striking it with another chisel-like tool (Anon. 1825: 120).

The beads may be left unaltered, or their broken ends may be rounded. The latter process is accomplished by placing the rough beads in an iron drum containing a mixture of plaster and graphite, or clay and charcoal dust (Orchard 1929: 85). The drum is then heated and rotated simultaneously. In another process, the beads are put in a large pan with sand and wood ash, or plaster and graphite. The pan is then heated over a charcoal fire and the contents are stirred continually with a spatula resembling a hatchet with a round end (Anon. 1825: 120). In both processes the heat and agitation round the broken ends while the various "packing" mixtures keep the beads from sticking together and prevent their perforations from collapsing as the glass becomes viscid. Depending on the length of time that the beads are treated in this manner, they may range from practically unaltered tube fragments to almost perfect spheroids.

Drawn beads have certain characteristics due to their method of manufacture. Beads may consist of unaltered tube sections with uneven, broken ends, commonly referred to as "bugle" beads. Bubbles in the glass and striations on the surface, if present, are oriented parallel to the axis, an imaginary line passing through the centre of the perforation. The perforation is parallel-sided and usually has a smooth surface.

Wound beads are produced in a totally different manner. In this process, a thin filament of glass is drawn from a molten rod and repeatedly wound around a rotating metal mandrel until the desired size and shape is achieved (Murray 1964: 16). The remainder of the filament is then cut from the bead which is heated and turned to further fuse the glass and create a smoother surface. This procedure is continued until several beads have been formed. After cooling, they are removed from the mandrel which is sometimes tapered to facilitate this step.

The surfaces of wound beads usually exhibit swirl marks that are at right angles to the axis. Bubbles in the glass are either round, or elongate and perpendicular to the axis. The perforation may taper and have an uneven surface.

Drawn Beads

Ia*

Tubular; medium; translucent, dark palm green (23 ni; 10GY 4/4); one specimen (Fig. 1a). The glass is almost opaque due to the presence of numerous linear bubbles. The ends are badly eroded but appear to be broken. Length: 19.5 mm; diameter: 4.5 - 6 mm; perforation: 2 - 3 mm; provenience: 1T3C1.

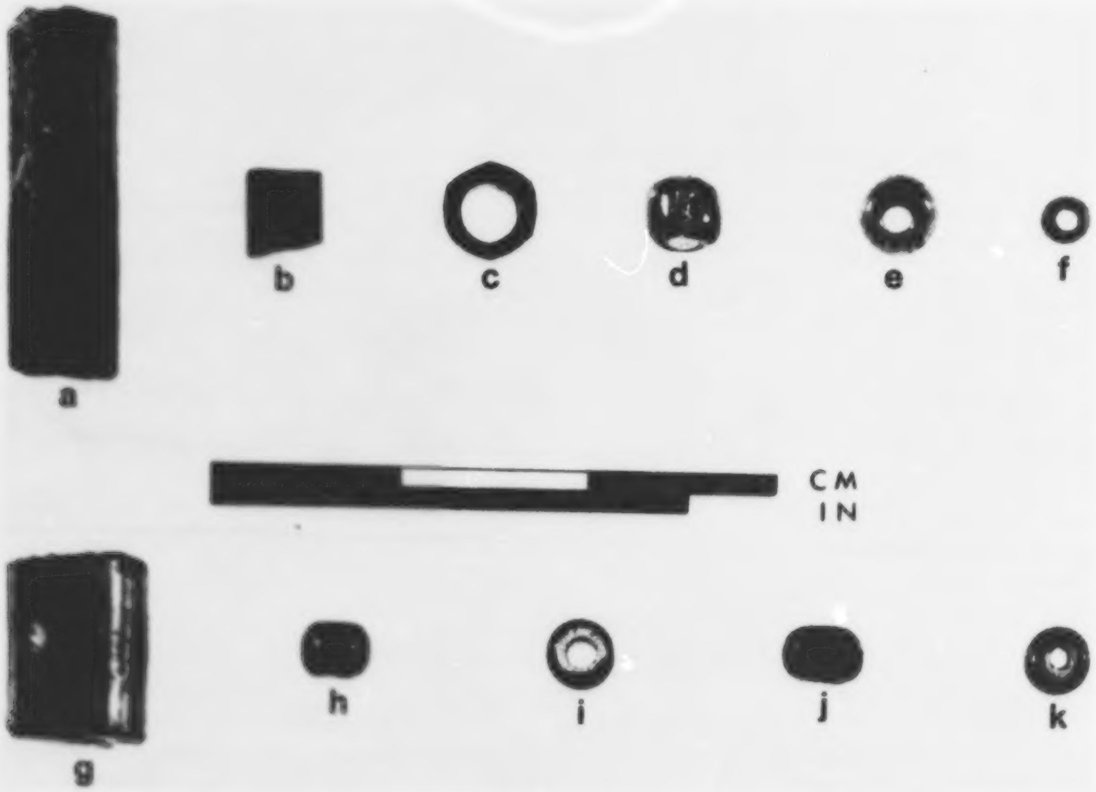

Fig. 1. Drawn beads: a, tubular, translucent, dark palm green; b, c, tubular, hexagonal, transparent, bright navy; d, e, circular, transparent, bright navy; f, circular, transparent, bright blue; g, tubular, opaque redwood on transparent apple green, decorated; h, i, circular, opaque redwood on transparent apple green; j, k, circular, transparent scarlet on opaque white. (Fig. 1-5: all photos by George Vandervlugt.)

Ic13

Tubular, hexagonal; medium; transparent, bright navy (13 pg; 7.5PB 3/4); two specimens (Fig. 1b, c). These beads consist of short sections of unaltered hexagonal tubing. The ends exhibit even to irregular breaks. The perforation is large and circular. Length: 4.5 mm; diameter: 4-5 mm; perforation: 2-3 mm; provenience: 1T2B1A, 1T2G2.

If2

Tubular, cornerless hexagonal; large; transparent, light gray (c; N 8/10); one specimen (Fig. 2a). This type consists of a short section of hexagonal tubing with a small triangular facet cut on each corner. The body facets are composed of unaltered tube faces that are in the shape of relatively even, elongated hexagons. The bead has a total of 18 facets. The ends are broken and very uneven. Length: 7 mm; diameter: 7.5 mm; perforation: 3.5 mm; provenience: 1T1G4.

If5

Tubular, cornerless hexagonal; large; transparent, amethyst (11 lc; 5P 4/8); one specimen (Fig. 2b). The bead appears to be black unless held up to a light. This type has the same form as the previous one. The only difference is that the corner facets are larger with the result that the body facets are diamond-shaped. The ends are broken. The perforation is large and circular. Length: 6 mm; diameter: 7.5 mm; perforation: 4 mm; provenience: 1T1A9.

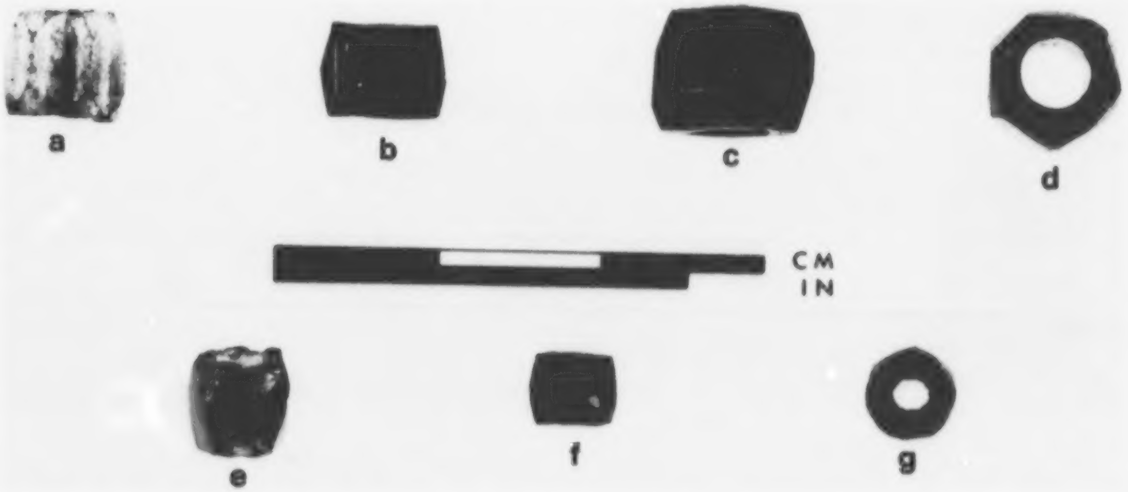

Fig. 2. Tubular, cornerless hexagonal beads: a, transparent, light gray; b, transparent, amethyst; c, d, transparent, bright navy; e, g, transparent ultramarine on translucent light aqua blue.

If*

Tubular, cornerless hexagonal; large; transparent, bright navy (13 pg; 7.5PB 3/4); 41 specimens (Fig. 2c, d, and 3). These beads are identical in form to the previous cornerless hexagonal types. However, depending on the amount of care taken in grinding the corner facets, the body facets range from symmetrical, elongated hexagons to very irregular, erratic forms (Fig. 3).

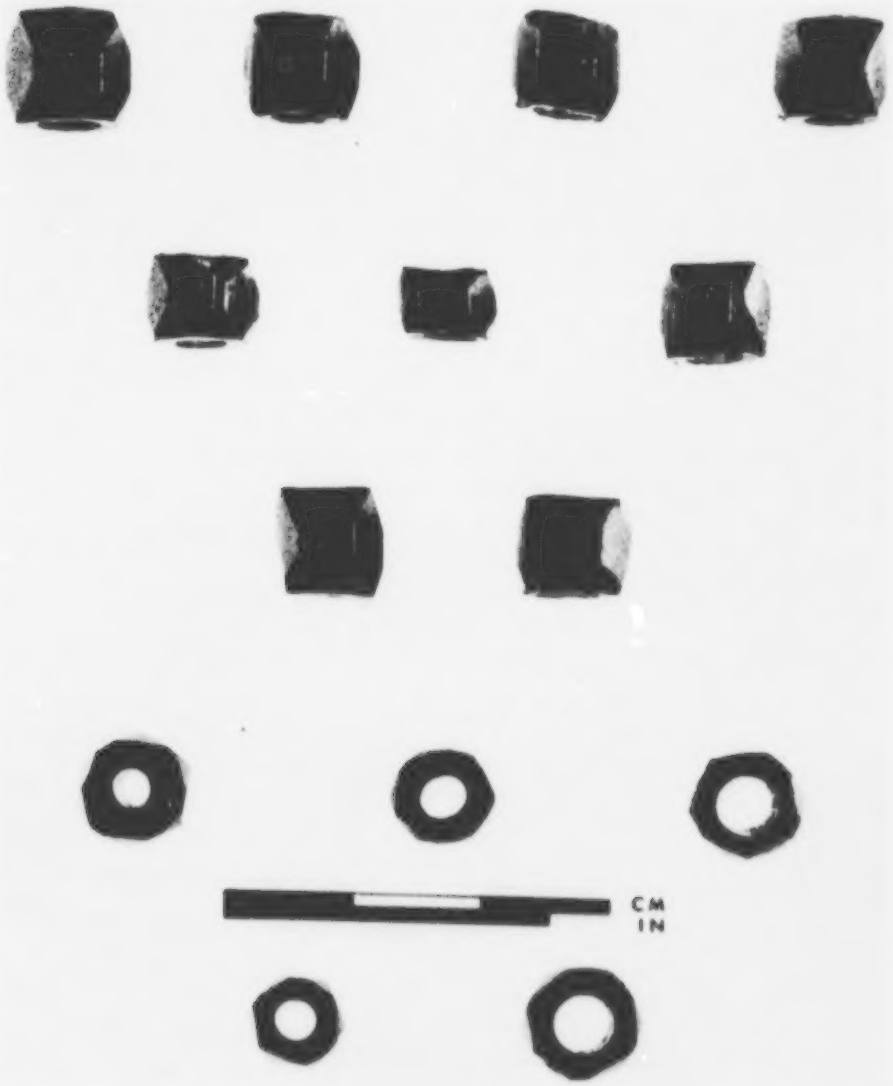

Fig. 3. Tubular, cornerless hexagonal, transparent, bright navy beads. Note variation in shape of facets and size of perforations.

The ends are broken and range from almost perfectly flat to very uneven. Perforations are large and circular, although in rare instances they are slightly oblate. Bubbles in the glass are uncommon. In all but one case, bead diameter is greater than or equal to the length.

	Length	Diameter	Perforation
Range	5.5-10 mm	7-10 mm	2-5 mm
Average	7.6 mm	8.8 mm	3.8 mm

Provenience and quantity per level: 1T1B1 (2), 1T1E1 (1), 1T1X1 (1), 1T2A1 (2), 1T2A2 (14), 1T2B1 (3), 1T2B1A (5), 1T2C1 (1), 1T2G1 (1), 1T3A1 (4), 1T3B1 (4), 1T3B1B (3).

If*

Tubular, cornerless heptagonal; very large; transparent, bright navy (13 pg; 7.5PB 3/4); four specimens (Fig. 4a-c). These beads are identical to the cornerless hexagonal types as far as general appearance is concerned. However, since the tube from which they were manufactured is heptagonal, the number of facets is increased to 21. This type is also larger. The ends are broken. The perforations are large and circular or slightly oblate.

On the one specimen from 1T2B1A (Fig. 4c), the grinding of the corner facets was continued to the point that they became pentagonal. The body facets are relatively even, diamond-shaped, unaltered tube faces that are slightly smaller than the corner facets. The surface is badly pitted, apparently due to exposure to fire.

	Length	Diameter	Perforation
Range	9-12.5 mm	10.5-14 mm	5-7 mm
Average	11.3 mm	12.3 mm	6.3 mm

Provenience and quantity per level: 1T1H4 (1), 1T2B1A (1), 1T3B1 (2).

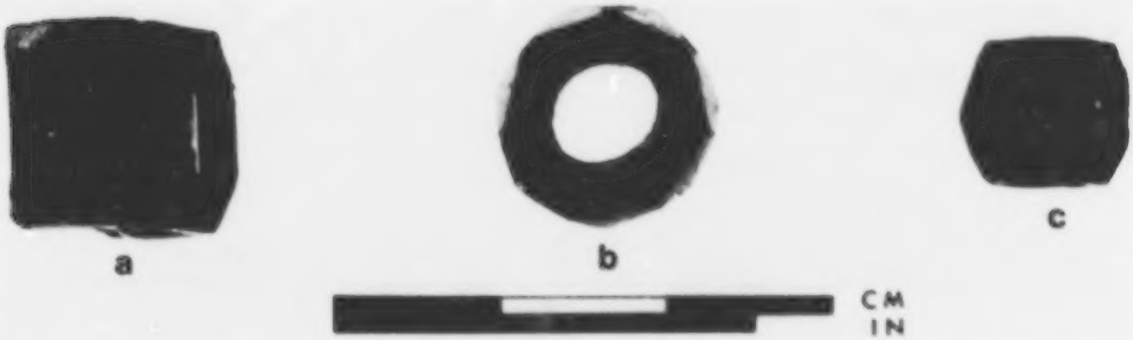

Fig. 4. Tubular, cornerless heptagonal, transparent, bright navy beads: a, b, typical specimens with triangular corner facets; c, atypical specimen with pentagonal corner facets.

IIa56

Circular; small; transparent, bright navy (13 pg; 7.5PB 3/4); two specimens (Fig. 1d, e). Length: 3 mm; diameter: 4 mm; perforation: 1.0 -1.5 mm; provenience: 1T3S1, 1T6R1.

IIa*

Circular; small; transparent, bright blue (16 lc; 5B 5/7); one specimen (Fig. 1f). Length: 2 mm; diameter: 2.5 mm; perforation: 1.0 mm; provenience: 1T1B1.

IIbb*

Tubular; large; thin, opaque, redwood (6 ne; 7.5R 4/6) outer layer decorated with six, straight stripes of black (p; N 1/0) on white (a, N 10/0); transparent, apple green (23 ic; 10GY 6/6) core; one specimen (Fig. 1g). The ends are broken. Beads of this style are often referred to as "Cornaline d'Aleppo." Length: 10 mm; diameter: 7.5 mm; perforation: 2-3 mm; provenience: 1T2F4.

IIIf2

Tubular, cornerless hexagonal; medium; transparent, ultramarine (13 pa; 7.5PB 4/14) outer layer; translucent light aqua blue (16 ea; 7.5B 8/4) core; five specimens (Fig. 2e-g). This type is identical in form to the other cornerless hexagonal types.

	Length	Diameter	Perforation
Range	4.5-7.5 mm	5.5-6 mm	2-3 mm
Average	5.7 mm	5.75 mm	2.5 mm

Provenience and quantity per level: 1T1F3 (1), 1T1G5 (1), 1T2E1 (1), 1T2E2 (1), 1T3B1 (1).

IVa6

Circular; small; opaque, redwood (6 ne, 7.5R 4/6) outer layer; transparent, apple green (23 ic; 10GY 6/6) core; six specimens (Fig. 1h, i). Beads of this style are often referred to as Cornaline d'Aleppo.

	Length	Diameter	Perforation
Range	2.5-3 mm	3-3.5 mm	1.5-1.75 mm
Average	2.7 mm	3.4 mm	1.6 mm

Provenience and quantity per level: 1T2M8 (1), 1T2M9 (5).

IVa*

Circular; small; transparent, scarlet (7 pa; 5R 4/14) outer layer; opaque, white (a; N 10/0) core; two specimens (Fig. 1j, k). Beads of this style are also called Cornaline d'Aleppo. Length: 3 mm; diameter: 3.5-4.5 mm; perforation: 1.0-1.5 mm; provenience: 1T1B1, 1T3C1.

Wound Beads

WIb16

Round; large and very large; transparent, bright navy (13 pg; 7.5PB 3/4); four specimens (Fig. 5a-c).

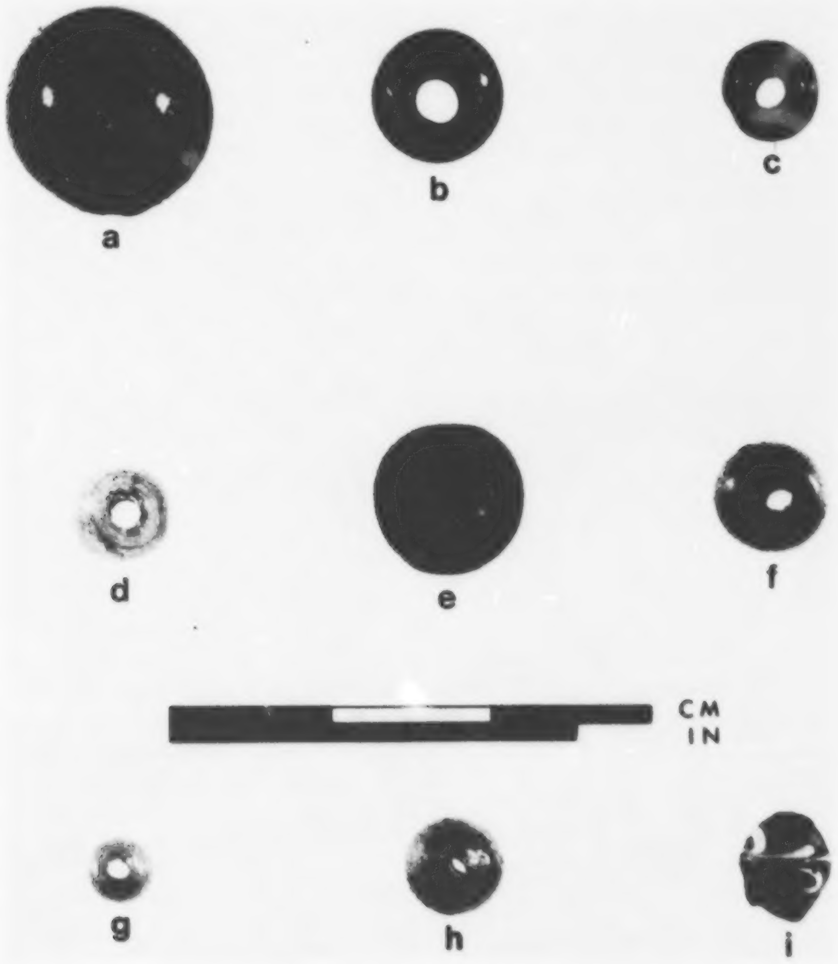

Fig. 5. Wound beads: a, c, round, transparent, bright navy; d, round, transparent, light cherry rose; e, g, round, translucent, robin's egg blue; h, round, transparent, bright blue; i, round, transparent, bright green, decorated.

	Length	Diameter	Perforation
Range	5-12.5 mm	6.5-14 mm	2-3.5 mm
Average	8.9 mm	10.4 mm	3 mm

Provenience: 1T1B1, 1T1E2, 1T1F2, 1T2F1.

WIb*

Round; medium; transparent, light cherry rose (7 ga; 2.5R 7/8); one specimen (Fig. 5d). The glass contains numerous tiny bubbles. Length: 5 mm; diameter: 6 mm; perforation: 2 mm; provenience: 1T1D4.

WIb*

Round, small and large; translucent, robin's egg blue (16 ic; 5B 6/6); three specimens (Fig. 5e-g).

	Length	Diameter	Perforation
Range	3-9 mm	4-9 mm	1.0-2 mm
Average	6.3 mm	6.7 mm	1.3 mm

Provenience: 1T1C2, 1T2J2, 1T6R3.

WIb*

Round; medium; transparent, bright blue (16 lc; 5B 5/7); one specimen (Fig. 5h). The glass is bubbled. Length: 6 mm; diameter: 6 mm; perforation: 1.5 mm; provenience: 1T2R1.

WIIIb*

Round; large size; transparent, bright green (22 nc; 2.5G 5/9) body decorated with an opaque, white 9a; N 10/0) floral wreath that encircles the equator; one specimen (Fig. 5i). Several bubbles are present in the glass. Length: 7 mm; diameter: 6 mm; perforation: 2 mm; provenience: 1T2X2.

Discussion and Conclusions

Most of the glass beads recovered from the Yuquot excavations came from the village site. Only five specimens representing four types (IIa56; WIb*, transparent bright blue; WIb*, translucent robin's egg blue; and WIIIb*) were retrieved from San Miguel Island. None of the types from the island were found at the village and vice versa. Unfortunately, only one of the beads from San Miguel is distinctive enough to be dated now. The decorated bead (WIIIb*) is attributed to the Late Historic Period (1760-1820 or slightly later) by Quimby (1966: 88). However, although the earliest date is probably relatively accurate, this type continued to be manufactured and traded until at least the 1860s, as suggested by the presence of similar specimens at Fort Berthold II, North Dakota, which was in operation from 1862 to 1886 (Smith 1972: 150).

Beads were restricted to the upper 4.5 ft. in the village deposits. They were most common in the upper foot; only 20% of the beads recovered came from below this depth. Tubular, cornerless hexagonal and heptagonal beads predominated, making up 71% of the total assemblage. Commonly (but erroneously) referred to as Russian beads, they were abundant in the upper foot of the excavation. Although rare below this depth, one specimen (If5) was found 4-4.5 ft. below the surface in 1T1A. The only other beads to achieve this depth were the type IVa6 Cornaline d'Aleppo specimens uncovered in 1T2M.

The only beads from the village that can be assigned relative dates are the cornerless beads (If and IIIf types). These can be attributed to the period from about 1780 to about 1880; Harris and Harris (1967: 151, types 129 and 130; 157-58) record similar types for the period from 1780 to 1836, while Woodward (1965: 10) states that faceted, tubular beads were popular on the West Coast from the 1830s to about 1880.

The remaining beads are not diagnostic to any specific time period and cannot be used to establish or corroborate dates for the archaeological strata in which they were found. The circular beads are useless for dating purposes because of their extremely long temporal range. They were among the first beads to be brought to the New World and are still being made. The unfaceted tubular specimens fall into much the same category. The undecorated wound beads in the collection are more distinctive, but a chronological sequence has not been worked out for them as yet. However, since they appear in relative association with the datable types, they should have approximately the same general time range.

The small circular beads, often referred to as "pony beads," were used mainly to decorate clothing and various other items. The larger beads were utilized primarily in the manufacture of necklaces, although the cornerless, tubular types were also used to ornament garments (Woodward 1965: 10) and baskets (Orchard 1929: 139-40). Some of the other beads may have been similarly employed.

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Clay Tobacco-Pipes from Yuquot, British Columbia

Iain C. Walker

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Abstract

Twenty-four clay tobacco-pipe fragments were recovered from excavations at Yuquot, British Columbia. Twenty were standard, white ball-clay fragments of European tradition. Of the other four fragments, one of pale buff clay exhibiting traces of shellac or varnish seems to have been professionally made; two, one of buff clay and one of a pale, dirty white-buff clay, apparently were not made by professional pipemakers, and one of grey clay was probably native-made. Certainly some and probably all of the material is 19th century.

Submitted for publication 1973, by Iain C. Walker, Archaeological Survey of Canada, National Museum of Man, Ottawa.

Clay Tobacco-Pipes from Yuquot, British Columbia

A total of two dozen clay tobacco-pipe fragments were recovered from excavations, directed by W.J. Folan, then of the National Historic Parks and Sites Branch, at Yuquot, a Nootkan village on the west coast of Vancouver Island (Dewhirst 1980). Of these fragments, all but four were standard, white ball-clay (erroneously called kaolin in North American archaeological literature) fragments of European tradition.

Of these 20, two were bowl fragments, one comprised a bowl and stem fragment, and one was a stem fragment with the spur on the underneath of the bowl attached. Four, probably five, stem fragments included the extreme mouthpiece end; three other fragments included parts from near the end of the stem.

The four fragments that do not belong to this group will be dealt with later in this report; the following is a description of the standard pipe fragments.

1T1F2-15: small bowl fragment including part of lip; corrugated outer surface. Rim and inside surface indicates use for smoking.

1T1S2-97: small bowl fragment; plain; inside surface shows probable use for smoking.

1T1C4-201: part of bowl and stem fragment; plain; no specific evidence of use for smoking on inside of bowl.

1T2H1-3: stem fragment with spur from underneath of bowl attached; the number 8 raised horizontally on either side of spur and number 78 impressed on left side of stem near junction of stem and bowl base.

1T1L5B-1768: stem fragment with mouthpiece; stem becomes oval in cross section towards end; end widened and thickened by a ridge (Fig. 1c).

1T3A1-34: stem fragment with mouthpiece; similar to the preceding (Fig. 1b).

1T1A2-71: stem fragment with mouthpiece; traditional slightly rounded-off plain end (Fig. 1a).

1T2E3-1224: stem fragment with mouthpiece; appears to have traditional plain end as above specimen, but slight damage precludes certain identification.

1T3B1B-20: stem fragment probably with mouthpiece; appears to have the traditional plain end, but, as with above specimen, slight damage precludes certain identification; appears to have been burnt subsequent to being broken and discarded.

1T2E1-26: oval-sectioned stem fragment, probably from very near mouthpiece end.

1T1X1-81: stem fragment with apparent beginning of oval-sectioned part, presumably towards end of stem; very similar to 1T1L5B-1768 and 1T3A1-34 above.

1T2A3-1: stem fragment, one end tending to become oval in cross section and probably from near mouthpiece; lettering .....ALL impressed on one side of stem.

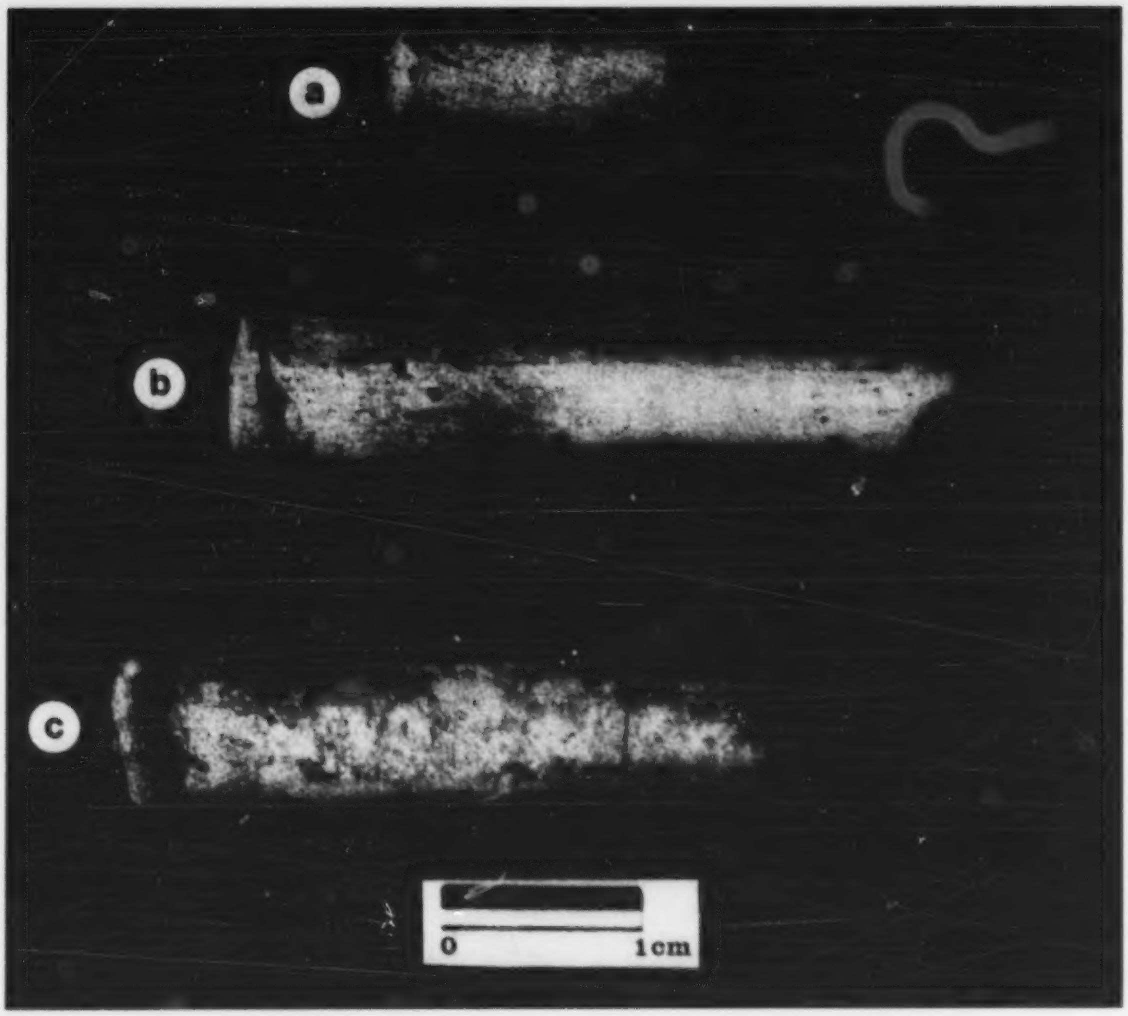

Fig. 1. Three clay pipe mouthpiece fragments: a, 1T1A2-71; b, 1T3A1-34; and c, 1T1L58-1768. (Fig. 1-6: all photos by G. Lupien.)

1T1X1-82: stem fragment, almost certainly from near bowl; 40 McDOUG..... impressed on one side, GLASGOW on other (Fig. 2 and 3).

The remaining seven fragments, 1T3C7-363X, 1T2G2-1367X, 1T1F3-1049, 1T1A28-1590X, 1T1X1-144, 1T2G4-1316, and 1T1C1-4, are all stem fragments and have no particular diagnostic traits.

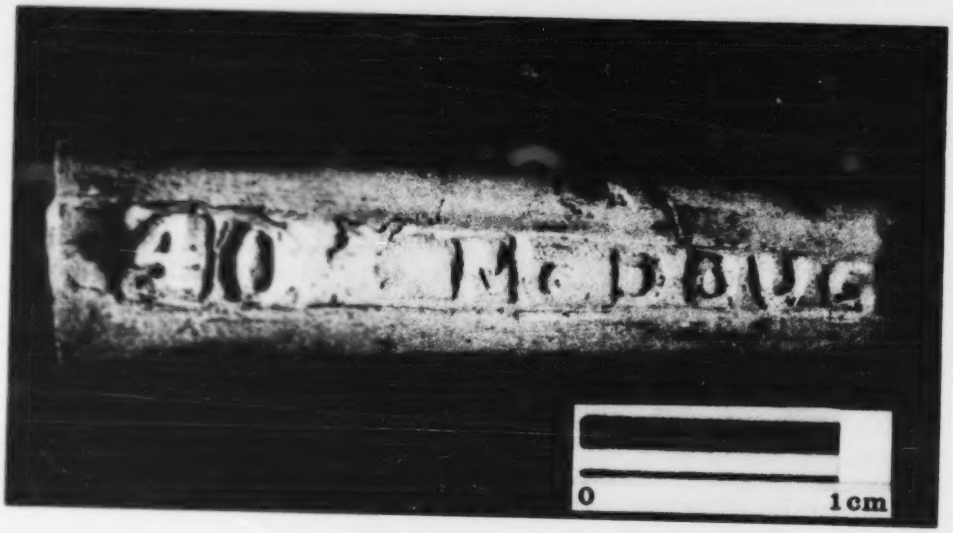

Fig. 2. Pipe-stem fragment marked 40 McDOUG[ALL] (1T1X1-82).

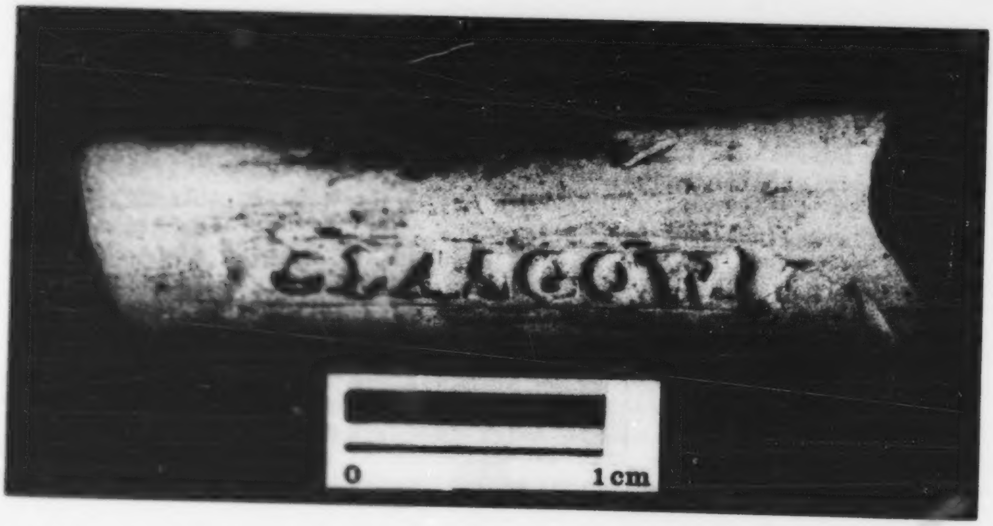

Fig. 3. Opposite side of pipe stem shown in Fig. 2 marked GLASGOW (1T1X1-82).

The only direct dating evidence from these stems comes from fragments 1T1X1-82, marked 40 McDOUG[ALL]/GLASGOW (Fig. 2 and 3), and 1T2A3-1, the fragmentary inscription on one side of which would originally have read McDOUGALL also. The McDougall pipemaking firm of Glasgow was a famous factory whose pipes have been found worldwide. It was founded in 1846 and continued to make pipes until 1967. It is probably still possible to obtain McDougall pipes today. In latter years they dropped their name from their products and used only SCOTLAND, which supplanted GLASGOW in 1891 when the United States, through the McKinley Tariff Act, made it mandatory that imported items be marked with their country of origin (Walker and Walker 1969). It would be reasonable to suppose, therefore, that fragment 1T1X1-82 was produced between 1846 and 1891. It is known that McDougall's exported pipes from the beginning, as many of their pipes have been found at Old Sacramento City, California, which is well dated to 1846-52 (Humphrey 1969: 17-18).

The 40 beside the name is the pipe type-number, and the placing of such numbers in this position appears to have been a standard Glasgow practice. For this reason, therefore, it is possible that fragment 1T2H1-3, which has the type-number impressed on it, would also be a Glasgow product. The meaning of the 8 on either side of the spur in this example is uncertain. According to a price-list of 1900, McDougall's type 40 was a "Thistle Ben Nevis" pipe; at 8 d a gross it was among the cheapest Glasgow pipes (Labour Literature Society 1900: 6). Unfortunately, virtually no catalogues of clay pipes have survived, and as a result it is usually impossible to identify any of the pipe styles with names or vice versa. What a "Ben Nevis" pipe looked like, therefore, is unknown and is likely to remain so until bowls with enough stem attached to show the type-number and the maker's name are recorded and illustrated from archaeological work. This particular variant of the style possibly had a thistle moulded on the side of the bowl; pipes with this sort of decoration are known.

Clay pipes, being relatively light and having thin and fairly brittle stems, did not need the bit characteristic of brier pipes that was necessary to help clench the brier pipe in the mouth. Normal mouthpieces on clay pipes are similar to that on fragment 1T1A2-71 (Fig. 1a). It is possible, therefore, that mouthpieces such as those on fragments 1T1L5B-1768 and 1T3A1-34 (Fig. 1b, c) represent general, clay imitations of brier-pipe shapes. If this is the case, neither of these two stem fragments would date before the mid-1850s because it was only at that time that brier pipes were introduced. However, as it also appears that European, particularly French, pipes were made with ridged ends to the mouthpieces, possibly before brier pipes appeared, and that this was sometimes imitated on British pipes, this dating should be used cautiously. The same terminus ad quem may also apply to the other pipe fragments from Yuquot that have oval-sectioned stems apparently tapering to mouthpieces, but it would be safer to use this dating of these examples as definite.

The small bowl fragment 1T1F2-15 is typical of 19th-century and late 18th-century pipes; however, without more of the pipe it is impossible to give a close date.

The collection of European-style clay pipes from Yuquot contains nothing that suggests a date earlier than the 19th century; the feel of the material would certainly be consonant with a 19th-century date.

One interesting point, though it has no bearing on dating, is that a number of the broken-off stem ends show either teethmarks or signs of having been pared down, rather like a pencil being sharpened, presumably to take some sort of makeshift stem of wood, reed, or some similar material. Good examples of this are fragments 1T2H1-3, 1T3C7-363X, and 1T2E1-26; other evidence is seen (apart from on mouthpieces 1T1L5B-1768 and 1T3A1-34) on fragments 1T2A3-1, 1T1X1-81, 1T1A28-1590X, 1T1F3-1048, 1T2E2-1224 (in which the wear makes it uncertain whether this is an actual mouthpiece end or not), and 1T3B1B-20.

The obvious reason for this is that pipes were too scarce to allow ready replacement of easily broken pipes; in the case of fragment 1T2H1-3, for example, the stem finally became so short that the bowl must have been practically against the smoker's cheek, and certainly could not have been held other than at the side of the mouth as it would have burnt the smoker's nose.

Care should be taken, however, not to make pseudo-anthropological speculations such as talking about a "culturally impoverished" group of smokers: to do this would be as fatuous as to suggest that because some of the pipes were Scottish-made there must have been Scotsmen at Yuquot. In fact, such evidence of heavy wear and reuse of broken pipes is widespread on material found on North American sites - it was, for example, quite common at the Fortress of Louisbourg and other 18th-century sites, judging by material in the National Historic Parks and Sites Branch collections and the Fortress of Louisbourg collection - and while it suggests that clay pipes were harder to come by than in Britain, where such examples are rare in my experience, and were certainly more expensive than in Britain, the explanation lies in economic history, not sociology.

As noted earlier, the collection of pipes from Yuquot contained four fragments not of the conventional, white ball-clay type. The following is a description of these fragments.

1T1G5-4: bowl fragment with beginning of stem; made of buff clay, with the stem appearing to join bowl at an acute angle; inside of bowl shows heavy carbon deposit from smoking.

1T2C1-465X: bowl fragment, heel, and stem fragment; made of a dense and heavy, pale, dirty white-buff clay. The stem has knife-marks suggesting it was carved or at least scraped into its final shape while leather-hard, and the bowl interior appears to have been gouged out with a sharp-pointed instrument while in the same state.

1T1F5-2: bowl fragment of a pale buff clay showing a fragment of a human face surmounted by a bearskin or other similar headgear; a faintly purplish chocolate shellac or varnish has been applied over the exterior; inside of bowl shows heavy carbon deposit from smoking (Fig. 4).

1T1B3-557X: stem and bowl fragment, with spur; made of grey clay and with relatively elaborate decoration apparently carved or scraped on the leather-hard clay; inside of bowl and stem shows evidence of use for smoking (Fig. 5 and 6).

None of these four fragments have any parallels known to me. Dr. David Sanger, formerly of the Archaeological Survey of Canada, National

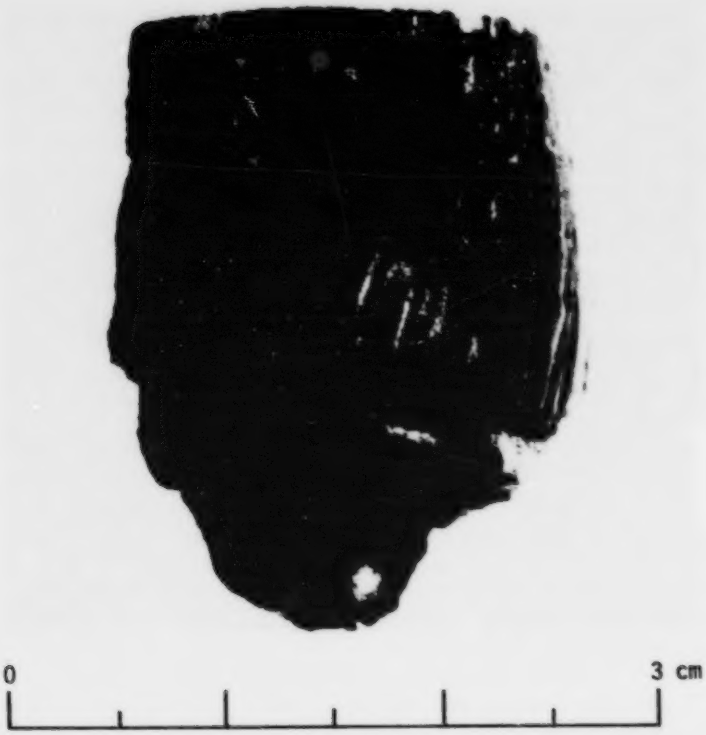

Fig. 4. Effigy pipe-bowl fragment (1T1F5-2).

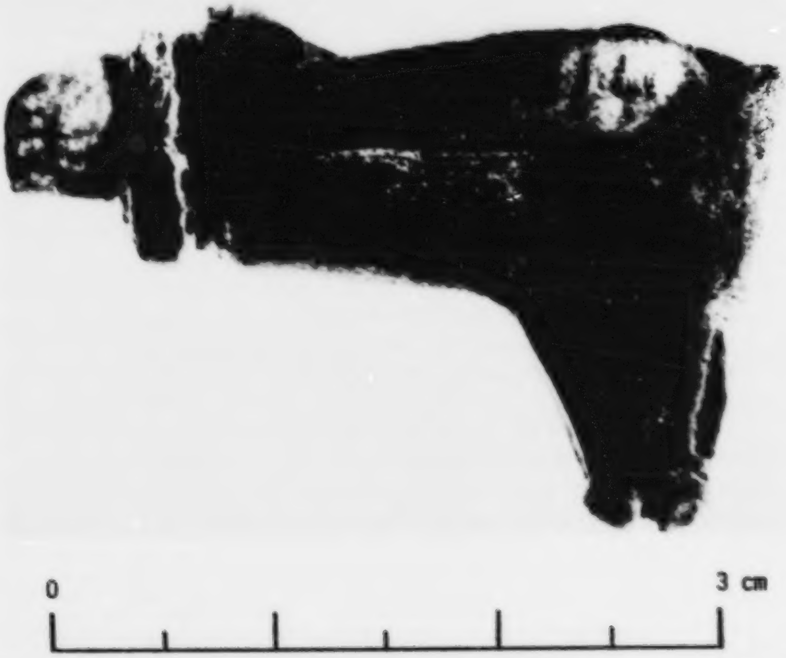

Fig. 5. Pipe fragment, probably native-made (1T1B3-557X).

Museum of Man, National Museums of Canada, Ottawa, and now of the University of Maine, Orono, indicates that they are not native pipes. Fragments 1T1G5-4 and 1T2C1-465X appear from their general crudeness (particularly in the case of the latter example) to be homemade, at least in the sense that they would not have been made by a professional pipemaker. They are likely to have been made either by a smoker for himself at a time when he was unable to obtain anything better, or by some non-professional for such a customer.

Fragment 1T1F5-2, however, appears to have been made in a proper mould and professionally trimmed, though the use of the varnish on this fragment is unknown to me. (It is conceivable, of course, the varnish was added by the pipe's owner.) Unfortunately, not enough of the bowl survived to allow possible identification of the style without varnish.

Fragment 1T1B3-557X is the most unusual of this group: I think it was native-made rather than European. If so, possible parallels may be found among Northwest Coast ethnographic material.

Because no archaeological data was available to me, no attempt was made to relate the material examined to any stratigraphic or other significant grouping nor was any interpretation possible. No attempt was made to apply statistical pipe-stem bore-diameter dating to the white clay pipestems, as this form of dating can be applied meaningfully only to potentially significant deposits and rarely to a whole site unless it is of reasonably short occupation. Further, as a method of dating, the technique ceases to work on material later than about 1770, and certainly some and probably all of the material here is 19th century. In any case, 18 measurable fragments would have been a statistically poor sample even from a single deposit, not to mention from the whole site.

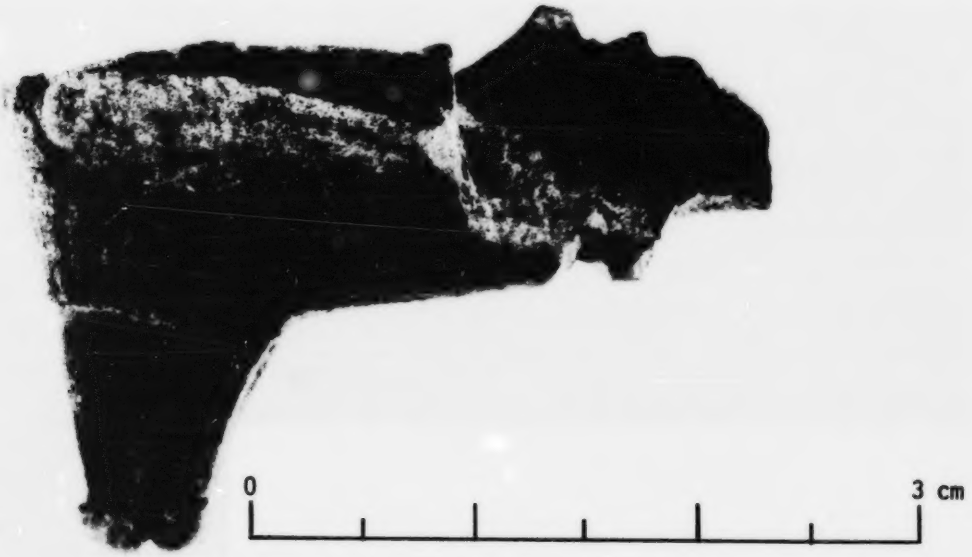

Fig. 6. Opposite side of fragment shown in Fig. 5 (1T1B3-557X).

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Ceramics from Yuquot, British Columbia

Richard Lueger

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ABSTRACT

In 1966 the National Historic Parks and Sites Branch conducted archaeological investigations in and near the village of Yuquot, British Columbia, under the direction of W.J. Folan. Excavators recovered sherds of at least 483 ceramic objects, all of them from the historic period. The ceramics represented two distinct components. The earlier consisted of Mexican **majolica** and coarse Hispano-Mexican earthenware, remnants of the Spanish garrison that occupied the site in 1789 and from 1790 to 1795. The second component, by far the larger, was deposited by the Nootkans after they reoccupied the site in 1795. Included in the Nootkan reoccupation component were eight examples of mid-18th to early 19th-century British pottery, but the majority was late 19th- and early 20th-century table- and kitchen ware from Britain, China, probably France, Germany, Japan, the USA, and perhaps Canada, in about that order. Ceramic vessels evidently did not begin to supplant native forms until the last two decades of the 19th century, but the choice of ceramic vessels was probably affected by traditional Nootkan practices and cultural biases. The relative scarcity of mid-20th-century ceramics may well reflect the rapid decline of the village's population during the early decades of that century.

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Dr. Arnold Pilling of Wayne State University, Detroit, Michigan, and Dr. Charles Fairbanks of the University of Florida, Gainesville, helped identify the Spanish majolica. Paul Chace, formerly of the Charles W. Bowers Memorial Museum, Santa Ana, California, advised me on the Oriental stoneware. Florence Lister of the University of New Mexico also offered some comments on the majolica.

Needless to say, I am totally responsible for any errors, omissions, or misinterpretations I may have made.

INTRODUCTION

In this study I attempt to serve four basic purposes: 1. to illustrate and interpret the life syles of the former and present inhabitants of the site through their ceramic refuse; 2. to enable researchers examining other elements of the site to readily correlate all data; 3. to assist researchers in related areas by providing an easily accessible inventory for comparison; and 4. to participate in the evolution of a system of description,, organization, and analysis.

Obviously, we are limited in our ability to fulfill the first goal. Pottery is a post-contact phenomenon in coastal British Columbia. Aside from a few clay-lined bakepits in the San Juan Islands (King: 1950), there is no current evidence to suggest that pottery was known on the Northwest Coast before white contact nor that it was made by Indians afterwards. Nor is there much information on historical period ceramics recovered from comparable Northwest Coast sites, on locally available ceramics on the coast during the 19th and early 20th centuries, or on transitional Nootkan material culture during the same period. Any archaeological illustration of the shift from native to European material culture will be necessarily limited because virtually all indigenous Nootkan domestic vessels and utensils were of perishable materials, namely shell, wood, horn, and basketry. Any such remains have disintegrated in the damp coastal environment while the durable ceramic sherds survive.

Nevertheless, this study can contribute to North American archaeology and the history of Yuquot. The small but tightly dated sample of late 18th-century Hispano-Mexican pottery left by a Spanish military post will be of interest to historical archaeologists in Mexico and the southern portions of the USA. The description and partial dating of the ceramic sample deposited by the Yuquot Nootkans represent one of the first studies of contact-site ceramics in British Columbia. This paper may therefore help to introduce the subject to students of archaeology in that province. With this in view, brief ware histories have been provided to put the material in perspective even though such accounts will be superficial for most historical archaeologists.

The principles of organization used to present and describe the ceramics in the text are as follows: 1. component (Spanish occupation and Nootkan reoccupation), 2. ceramic group (earthenware, stoneware, and porcelain), 3. ware (e.g. **majolica**, creamware), 4. decoration technique (e.g. moulding, hand-painting), 5. form (e.g. cup, saucer), and 6. individual object.

The components reflect the history of the site. The Spanish occupied the site in 1789 and from 1790 to 1795. They left behind broken **majolica** tableware (sherds of at least 26 objects were recovered) and tableware and mixing, storage, and cooking vessels in several varieties of Mexican and Spanish coarse earthenware (sherds of at least 41 objects recovered) (Weigand et al. 1973). These examples were recovered mainly from operations one through three, suboperations A through D of the main trench within the village of Yuquot, and from the several test pits on the small island at the mouth of Friendly Cove (Dewhirst 1980). (This island is nameless, but as it is one of the San Miguel Islands it will be referred to simply as "San Miguel Island.")

The Nootkans reoccupied Yuquot when the Spanish left in 1795 and have lived there at least seasonally ever since, with a hiatus in the 1920s and 1930s. Therefore the second component dates from 1795 to the present, but since the excavations were conducted in 1966, the effective dates for the purposes of this paper are 1795 to 1966. All ceramics not of Hispano-Mexican origin were assigned to the Nootkan reoccupation component, even though sherds of English creamware, pearlware, and scratch-blue salt-glazed stoneware might well have been used and left by the Spanish, the British navy, or by American or British traders. With no evidence one way or the other, these and the various undated examples of Oriental ceramics have been included with the Nootkan component. The vast majority of the material attributed to the Nootkan period consisted of late 19th- and early 20th-century tableware from Britain, continental Europe, the USA, the Orient, and possibly Canada. Some 416 original objects in all, this portion of the component contained comparatively few examples of kitchen or storage vessels and almost no examples of more specialized forms, such as eggcups or chamberpots. The Nootkan reoccupation component was found distributed throughout the upper levels of the main trench within Yuquot, sometimes superimposed over the Spanish period ceramics. A few examples were found on San Miguel Island, though no stratigraphic or horizontal differentiation was noted between the two components.

The next division, into the major ceramic groups of earthenware, stoneware, and porcelain, reflects standard usage, even though stoneware is, strictly speaking, merely a term for earthenwares in a highly vitrified state.

The "ware" is not to be confused with its use in combination forms such as "earthenware" or "tableware." "Ware" is a technical term describing a range of pottery fabrics and surface treatments, and typically has a defined continuity through time in a given place of origin. It is perhaps the most useful unit of pottery categorization. Histories and general characteristics of wares are generally readily available in the literature but, for the reason previously stated, they have been summarized in the text. An effort was made to order the wares to historical sequence within each category, but this was not always possible because not all of the wares were identified and dated.

On advice from D. Griffiths, the order of decoration techniques has been organized as follows: (a) decoration in the body (moulded or applied relief decoration); (b) decoration under the glaze (most transfer printing, banding, hand-painting, etc.); (c) decoration in the glaze (coloured glazes); and (d) decoration on the glaze (gilding, hand-painting, etc.). Where possible, historical sequence was again used as the next criterion to arrange the sequence of presentation. Transfer printing, for example, predated the stamped or so-called "Portneuf" ware, though the technique of stamping is of course far older than transfer printing.

As for the vessel forms, these have been ordered according to a logical sequence of use: cup, saucer, small plate, large plate, platter, bowl, large bowl, basin, etc. (Griffiths personal communication).

Various object shapes have been illustrated in cross section, but in general the shapes are familiar to contemporary readers and the photographs will generally be description enough. Some 19.5% of the objects could not be identified regarding shape, and these have been dealt with briefly.

This also applies to objects too fragmentary to merit description beyond a note in a subsection introduction. Most of the individual objects have, however, been identified regarding decoration technique and form. And, if they were large enough to display a reasonable portion of thier decoration, they have been photographed. With few exceptions, diameters and heights have been recorded where possible, and the same is true of the colours of fabrics, glazes, and decorations. Colours were identified under fluorescent light according to the Munsell system (Munsell Color Company 1960) and I sometimes added my own descriptive colour terms as an aid. Glaze craze or crackle patterns were classed according to March (1934: Pl. 3, 4), and inclusions in coarse earthenware, "temper" to prehistorians, were size-graded according to Wentworth's scale as quoted in Shepard (1963: 118).

THE SPANISH OCCUPATION

Majolica

"Majolica" is the term applied to a variety of tin-glazed earthenware produced both in Renaissance Italy and in Mexico from the 17th to the 19th century. The Mexican version is now most commonly called "majolica" by American historical archaeologists, but it is doubtful whether either term enjoyed currency in Mexico during production of the pottery. Mexican majolica is an equivalent of French faïence, Spanish Talavera, Dutch delft, and English delft, to name some of the other regional varieties. It must not be confused with a popular style of 19th-century refined white earthenware decorated with clear-coloured lead glazes, produced mainly in England, and also called "majolica" (Griffiths personal communication).

Faïence, majolica, and the various other varieties are characterized by a tin glaze on a light-coloured fine earthenware body. A tin glaze is a lead glaze made white and opaque by the addition of tin oxide, although the accidental or deliberate presence of some metal salts can impart colour. The technique has been used in the Middle East for at least 1200 years and was introduced into Spain by the Moors in the late Middle Ages. From Spain the technique was transported to Italy, where the pottery acquired the name "majolica" from the Majorcan traders who carried it, and from Italy it spread across Europe. Tin-glazed wares were largely replaced by white salt-glazed stoneware and improved earthenwares during the 18th century, but continued to be produced in areas such as Mexico that were technologically and commercially less competitive.

The Mexican majolica industry originated some time during the late 16th or early 17th century in Puebla de los Angeles, a city some 70 miles southeast of Mexico City and an established pottery centre in pre-Columbian times. Puebla was always the most important producer of majolica, but other manufactories operated at various times in Guanajuato, Mexico City, Guadalajara, Oaxaca, Aguascalientes, Atlixco, and Patzcuaro in Mexico (Cervantes 1939, 1: xi), in Panama (Long 1967), probably in Peru, and possibly in Honduras (Goggin 1968: 8, 9).

Puebla majolica was manufactured in three classes: tableware, decorative ware, and tiles, the last primarily for the facing of buildings. Only tableware was identified in the Yuquot sample, which fits comfortably into the developing picture of the late 18th-century Puebla tradition. Since little documentation on majolica dates from before the 20th century, typologies have been developed archaeologically and it is mainly an educated assumption that the Yuquot majolica and virtually identical samples from the American southeast and southwest, northern Mexico, and the Caribbean did indeed originate in Puebla.

I am not aware of any excavations at pottery sites in or near Puebla whose findings would substantiate these majolica attributions. The few studies available on museum collections of Mexican majolica (e.g. Barber 1908; Cervantes 1939; Van De Velde 1927) do not illustrate or describe objects similar to those found at Yuquot. Nor did my visit to Puebla permit any identifications. However, the best-informed opinions (Fairbanks personal communication; Goggin 1968; Lister personal communication) would assign a Mexican origin to the Yuquot majolica.

Puebla Blue on White

Puebla Blue on White majolica, as defined by Goggin (1968: 190), includes most of the majolica. The fabric is fine but porous and coloured buff or pale brown (about 10YR 7/4 or 2.5Y 8/4). After being weathered and buried for some 170 years, the fabric is usually about as hard as talc. Contrary to Goggin's criterion of homogeneous fabric, the fabric generally contains fine to black inclusions. The glaze is slick with a greasy lustre, is about 0.3 cm thick, and contains many minute bubbles.

Through the system of pottery nomenclature used in the American southeast and southwest, what appear to be decorative subvarieties of Puebla Blue on White have been and are being established in the literature of historical archaeology as distinct varieties, sometimes even misnamed "wares," each with its own defined time span and geographical distribution. San Elizario Polychrome (Gerald 1968: 45) and Huejotzingo Blue on White (Goggin 1968) are two subvarieties found at Yuquot that have been so classed. (The names are derived not only from supposed places of origin but from sites where the varieties have been found in considerable quantities or were first defined.) These two varieties meet the specifications for Puebla Blue on White, but this paper will follow the now-established usage and record them as separate varieties. Another subvariety of Puebla Blue on White that has yet to be institutionalized with its own name will be included with Huejotzingo Blue on White, with which it shares most of the essential attributes.

Cups

Sherds of what were inferred to be three cups were recovered. The wall thicknesses of the cups averaged 0.29 cm.

1T1C4-206 (Fig. 1f, 2a): body and rim sherds; the dark blue is 5PB 3/6, the wavy lines of light blue are 7.5B 8/2 to 2.5PB 6/4; diameter 9 cm.

1T2C5-527 (Fig. 1g, 2b): body, handle, and rim sherds; the light blue (2.5PB 6/4) line is opaque, slightly depressed like some blue on San Augustin Blue on White (Goggin 1968: 187); the translucent dark blue (5PB 4/6) spots are slightly raised, again like the San Augustin variety; rim diameter 7 cm.

1T2C5-556 (Fig. 1i, 2e): base sherds; the straight and scalloped bands around the foot ring are pale blue (10B 7/4); foot ring diameter 4.4 cm.

Plates

Two deep dinner or broad soup plates were identified. Their wall thicknesses average 0.53 and 0.7 cm, respectively.

1T2B1A-13 (Fig. 1d, 2i): base sherds; the blue is 10B 4/4; plate height is over 2.95 cm; foot ring diameter about 9 cm.

1T2R2-149 (Fig. 2j): base sherds; only traces of the blue (2.5PB 4/4 to 6/4) floor decoration are extant; foot ring diameter about 10 cm.

Bowls

Remains of at least three bowls were recovered. Their wall thicknesses range from 0.22 to 0.5 cm.

1T2C5-533 (Fig. 1e, 2d): base sherd; the blue ranges from 2.5PB 6/4 to 3/4; foot ring diameter 5.05 cm.

1T1Q1-11 (Fig. 2f): body and base sherds; the only decoration extant is a thin band of pale blue (2.5PB 7/4) just above the foot ring; bowl height at least 2.25 cm; foot ring diameter about 3.7 cm.

1T2R1-41 (Fig. 1h, 2c): body and rim sherds; the blue of the bands is 10B 6/4, the dark spots are 5PB 4/4 to 3/6 blue; diameter 15 cm. Gerald (1968: 44) depicts a similar sherd amid his San Elizario Polychrome; similar examples are also common on sites in Texas (Tunnell 1966: 8, "Style 4," fig. 2B) and Tunnell infers a time span of from 1718 to 1831 (1966: fig. 7).

Unknown form

One object represented by a rim sherd, 1T4R1-1, could not be further identified. It had a wide rim band of pale blue (5PB 6/2).

Huejotzingo Blue on White

A common and probably inexpensive variety of majolica, Huejotzingo Blue on White, has been found on numerous sites in northern Mexico and the southern USA. in contexts dated from about 1700 to well into the 19th century (Gerald 1968: 43).

Four rim sherds of at least one plate were recovered. 1T1Q1-28 (Fig. 1c) with a grey-blue (5PB 4/4) rim band; diameter about 20 cm.

Remains of two plates of a related subvariety of majolica are noted below. Instead of a straight rim band, these plates have a rim band with a wavy inner edge. Pilling (1952: 31) associates it with Huejotzingo Blue on White in his work on California Mission majolica and gives it a time span of 1789-1838 (1952: 30). In Texas, Tunnell (1966: fig. 7, "Style 5") seems to favour a period from as early as 1771 until at least 1793.

The two plates recovered were 1T3C4B-3 (Fig. 1b, 2g) and 1T5Q1-252 (Fig. 2h). The blue varies from 2.5PB 5/4 to 4/6. Estimated diameters are 22 and 24 cm, respectively, and average thicknesses are 0.41 and 0.69 cm, respectively, both plates being represented by rim sherds.

San Elizario Polychrome

One of the most common forms of late 18th-century majolica, San Elizario Polychrome, is characteristic of Spanish sites throughout northern New Spain (Gerald 1968: 45; Snow 1965: 25, 28-29, "Puebla Polychrome II;" Tunnell 1966: 8, 9, 15, "Style 7"). Although Gerald and Snow have defined it as a polychrome, Goggin included it with Puebla Blue on White (1968). Its makers also probably conceived of it as a monochromatic blue on white; the dark outlines, originally supposed to be black, were intended to emphasize the beauty of the blue as specified by the majolica potters' guild laws of 1653 (Barber 1908: 20). Gerald (1968: 46) assigns the style to the 1770-1800 period.

What were inferred to be seven deep plates were recovered: 1T1A1-28, 1T3A40-2675, 1T3B2A-481X, 1T2R2-89 (Fig. 1a), 1T2R2-147, 1T1S2-67, and 1T7S40-2. The colour of the blue ranges from 5PB 3/8 to 5/4 and the colour of the outlines varies from mottled brown (10YR 2/2 to 2.5Y 6/6) to mottled green (5Y 4/3 to 10GY 4/2). They have original diameters of about 20 cm and average thicknesses of 0.43 cm.

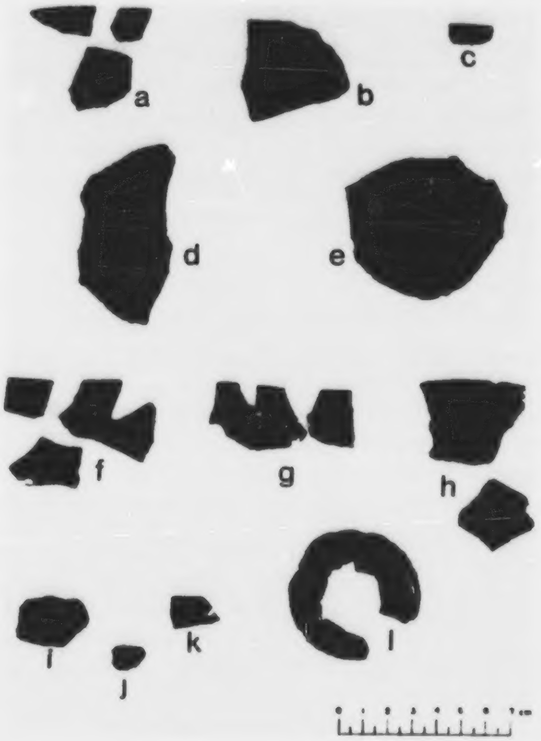

Fig. 1. Majolica. a, San Elizario Polychrome, 1T2R2-89; b, Huejotzingo Blue on White, wavy rim-band variety, 1T3C4B-3; c, Huejotzingo Blue on White, 1T1O1-28; d, 1T2B1A-13. Puebla Blue on White cups and small bowls: e, 1T2C5-533; f, 1T1C4-206; g, 1T2C5-527; h, 1T2R1-41; i, 1T2C5-556. Aranama Polychrome: j, 1T3A3-118; k, 1T2R2-140X. Tumacacori Polychrome: l, 1T2C5-2.

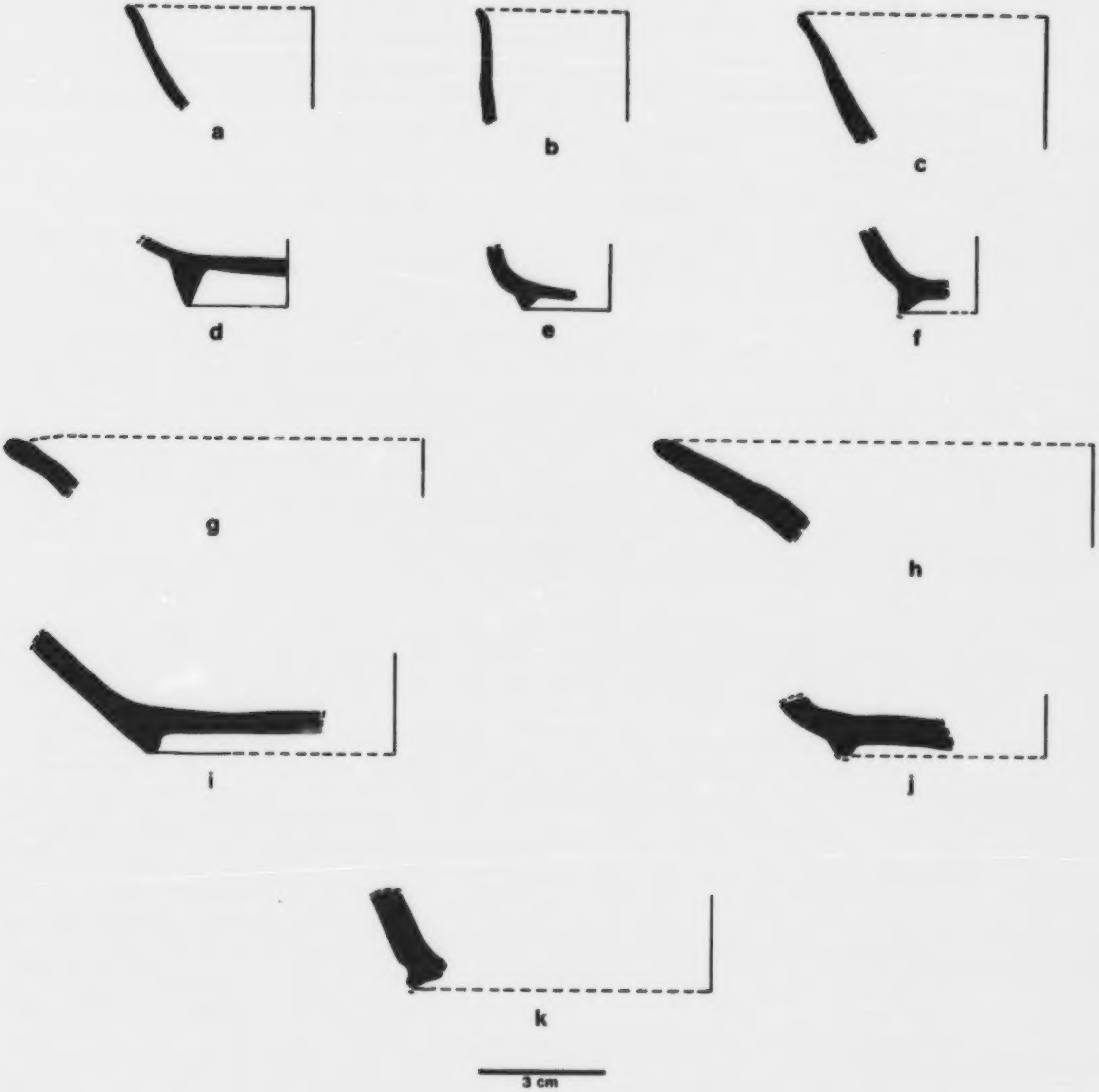

Fig. 2. Majolica. Puebla Blue on White cups and small bowls: a, 1T1C4-206; b, 1T2C5-527; c, 1T2R1-41; d, 1T2C5-533; e, 1T2C5-556; f, 1T1Q1-11. Plates: g, Huejotzingo Blue on White, wavy rim-band variety, 1T3C4B-3; h, Huejotzingo Blue on White, wavy rim-band variety, 1T5Q1-252; i, 1T2B1A-13; j 1T2R2-149; k, miscellaneous ware, 1T1S1-43.

Aranama Polychrome

As defined by Goggin (1968: 196-97), Aranama Polychrome majolica dates from the latter half of the 18th century (Goggin 1968: fig. 1) until as late as 1850 (Gerald 1968: 42).

Two sherds were recovered, 1T3A3-118 (Fig. 1j) and 1T2R2-140X (Fig. 1k). The fabric of the pottery is essentially the same as that of Puebla Blue on White. The decoration colours of 1T3A3-118 are orange (7.5YR 7/10), green (7.5GY 4/6), and yellow (2.5Y 8/10), all colours being outlined in dark brown (5YR 2/2) shading to black. The decoration colours of 1T2R2-140X are orange (7.5YR 6/8) bounded by dark brown (5YR 2/1). Sherd thicknesses range from 0.35 to 0.56 cm.

Tumacacori Polychrome

Tumacacori Polychrome majolica has been found in Mexico, New Mexico, Texas, Arizona (Goggin 1968: 200), and California (Pilling 1952: 24-25). Goggin infers a post-1820 date; Gerald (1968: 52), 1800 - 1860. This can now be moved back to at least 1795.

Only one tiny irregular rimsherd, 1T2C5-2 (Fig. 1l), was recovered. The fabric is, again, essentially the same as that of Puebla Blue on White. The tin glaze is powder blue (10B 7/4) and there are traces of dark blue (5PB 3/6) and bright yellow (10YR 8/8) decoration.

Green-Glazed Majolica

One split body sherd of an unknown form, 1T1C4-186X, was recovered. The fabric is buff (7.5YR 8/4) with some fine quartz and reddish inclusions; the surface has largely flaked away, but what remains is coated with a thin blue-green (5BG 6/6) tin glaze. Such vessels are not unusual on 18th-century North American Spanish sites, and they seem to have been common utility vessels produced in Mexico and/or Spain. Similar types were made from the late 17th through to the mid-19th centuries.

Miscellaneous Majolica

Four items, all closely related to Puebla Blue on White, could not be defined by variety because they were too fragmentary. One, 1T1S2-78, is a flat rimsherd with a black rim band. The other three, 1T1F3-1211, 1T1S1-43 (Fig. 2k), and 1T7S40-1, are base sherds of almost identical vessels, probably small bowls.

Coarse Hispano-Mexican Earthenware

Remains of about 41 objects of coarse Hispano-Mexican earthenware were found, generally in the same lots from which the majolica was recovered. A representative collection of sherds from 16 or 17 vessels was sent to Phil Weigand of the State University of New York at Stony

Brook, who with Sue Ward and Garman Harbottle conducted a detailed sherd analysis and whose paper appears in this volume. The following should be considered as a form of introduction to Weigand's paper, giving a general description of the pottery and estimates of total number of vessels. Except for the small jugs or jars and the olive jars, no sherds of which were sent to Weigand for analysis, the terminology used for the vessel forms is Weigand's.

Soup Bowls

Sherds of about 21 small bowls were found, though it must be stressed that the number and small size of the sherds make estimates very difficult. These soup bowls are usually about 16 cm in diameter with walls 0.25 to 0.6 cm thick, are formed of a pale orange fabric, and are glazed on the interior only. The glazes are yellow-tinged lead glazes, often mottled with tones of pale green; they are normally crazed in minute crystalline patterns and extend over the rim for a centimetre or two. Many of the bowls have dark brown (5YR 2/2 to 10R 3/4) underglaze handpainted decoration. The decoration is typically a thin line or dabs of brown on the rim (Fig. 3g, h) and lines and swirls about the floor (Fig. 31). 1T3C7-379 (Fig. 31, 4f) is by far the most complete example; its diameter is about 17 cm and its height 4.6 cm. The rest of the bowls were recovered from 1T1A3, 1T2A1, 1T2A2, 1T2B3A, 1T2C1, 1T2C4, 1T3C4, 1T1D4, 1T1F3B, 1T2G2, 1T1H3, 1T1X1, and San Miguel Island, the latter including 1T1W1-5 (Fig. 4e).

Cazuelas

Cazuelas are broad shallow serving or cooking vessels. At least seven, possibly nine are represented: 1T3A2-105X, 1T2C6-570 (Fig. 3k), 1T3C5-357, 1T2F5-1760, 1T1G2-3 (Fig. 3j), 1T1O2-82, and 1T1X1-143. Two other *cazuela* sherds, 1T3C5-356 and 1T1G6-1809X, were tested by Weigand, who suggests that they may be from *cazuela* 1T2C6-570 (Weigand et al. 1973). The *cazuelas* are superficially of the same ware as the soup bowls, made of a similar pale orange fabric and coated on the interiors only with a yellow-mottling-to-green lead glaze. The most complete example is 1T2C6-570 (Fig. 3k), about 46 cm in diameter, at least 11.8 cm high, and with walls 0.7-1.1 cm thick. It and 1T1X1-143 both have sooty undersides, indicating use for cooking.

Ollas

Ollas are large wide-mouthed jars, often used as cooking vessels. Sherds of at least four were found: 1T1C4-191 (diameter at least 22 cm), 1T2G4A-47 and 1T2G40-1604X (each diameter at least 20 cm), and 1T2R2-80 (diameter about 16 cm) (Fig. 4c). Body walls were all about 1.0 cm thick. The fabrics were coloured various shades of pale orange or grey-buff, coated on the vessel interiors with glassy greenish lead glazes. 1T1C4-191, 1T2G40-1604X, and 1T2R2-80 had soot on their exteriors, indicative of use for cooking.

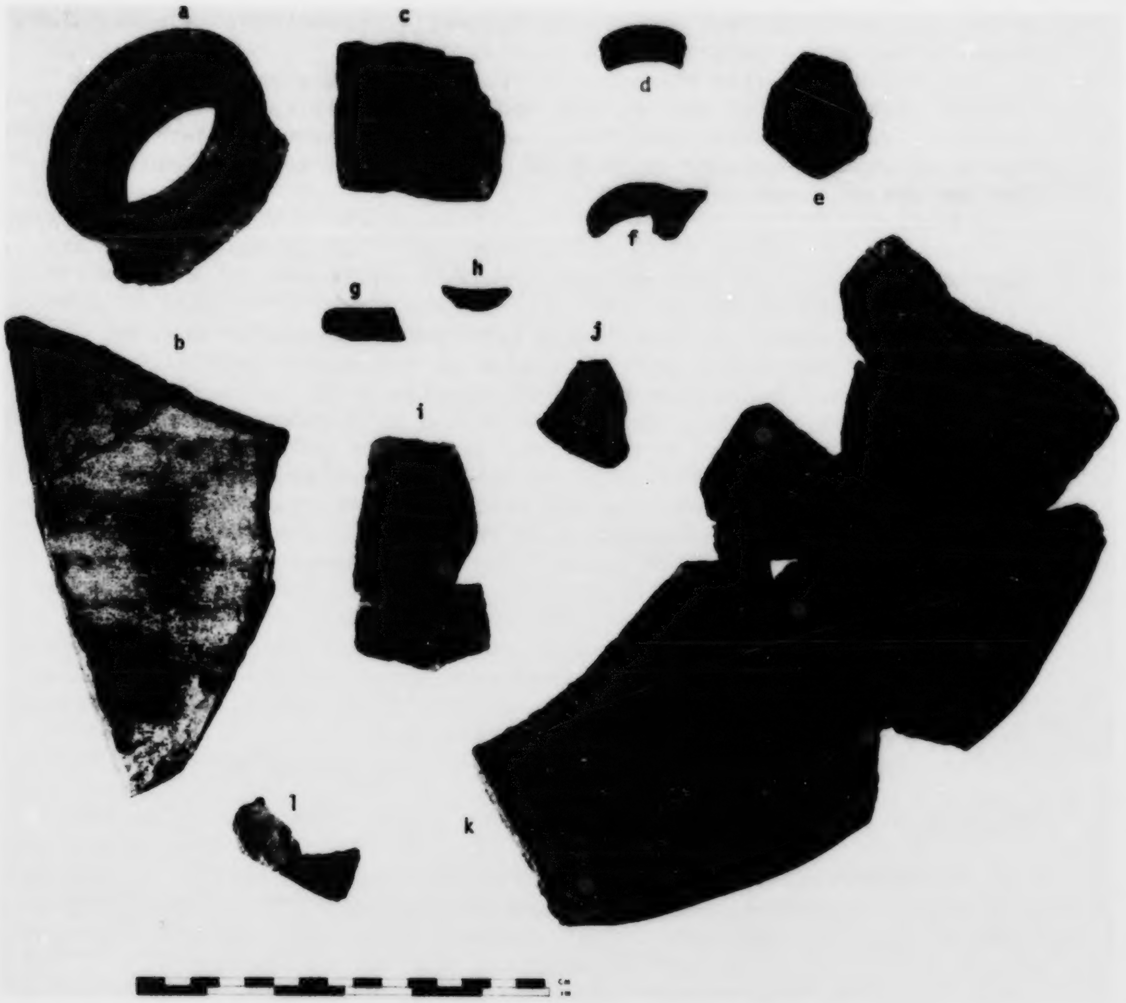

Fig. 3. Coarse earthenware from the Spanish occupation. Olive jars: a, b, 1T2C5-546; c, 1T2F5-1761; jugs: d, 1T1S1-60; e, 1T6T1-281X; f, 1T3C3-316X; soup bowls: g, 1T1X1-142; h, 1T2B3A-2; l, 1T3C7-379; *cantaro*: i, 1T7Q40-2; *cazuelas*: j, 1T1G2-3; k, 1T2C6-570.

Cantaros

Cantaros are narrow-mouthed storage jars. A probable three examples were recovered: 1T3B3A-1, 1T7Q40-2 (Fig. 3i, 4d), and 1T3S2-187. 1T7Q40-2 was the most complete; it was about 20 cm in diameter with a mouth about 11 cm wide. The body walls of the three ranged from 0.5 to 0.95 cm thick. All three were made of a grey-buff fabric and coated on the exterior only with a dark reddish brown slip (10R 3/4 to 2.5YR 5/4). The slips had undergone minute amorphous crazing and were flaking off.

Jarro

One *jarro*, or *taza*, was recovered, 1T1W1-5 (Fig. 4e). This is a small vessel about 16 cm in diameter, formed of a soft grey-brown

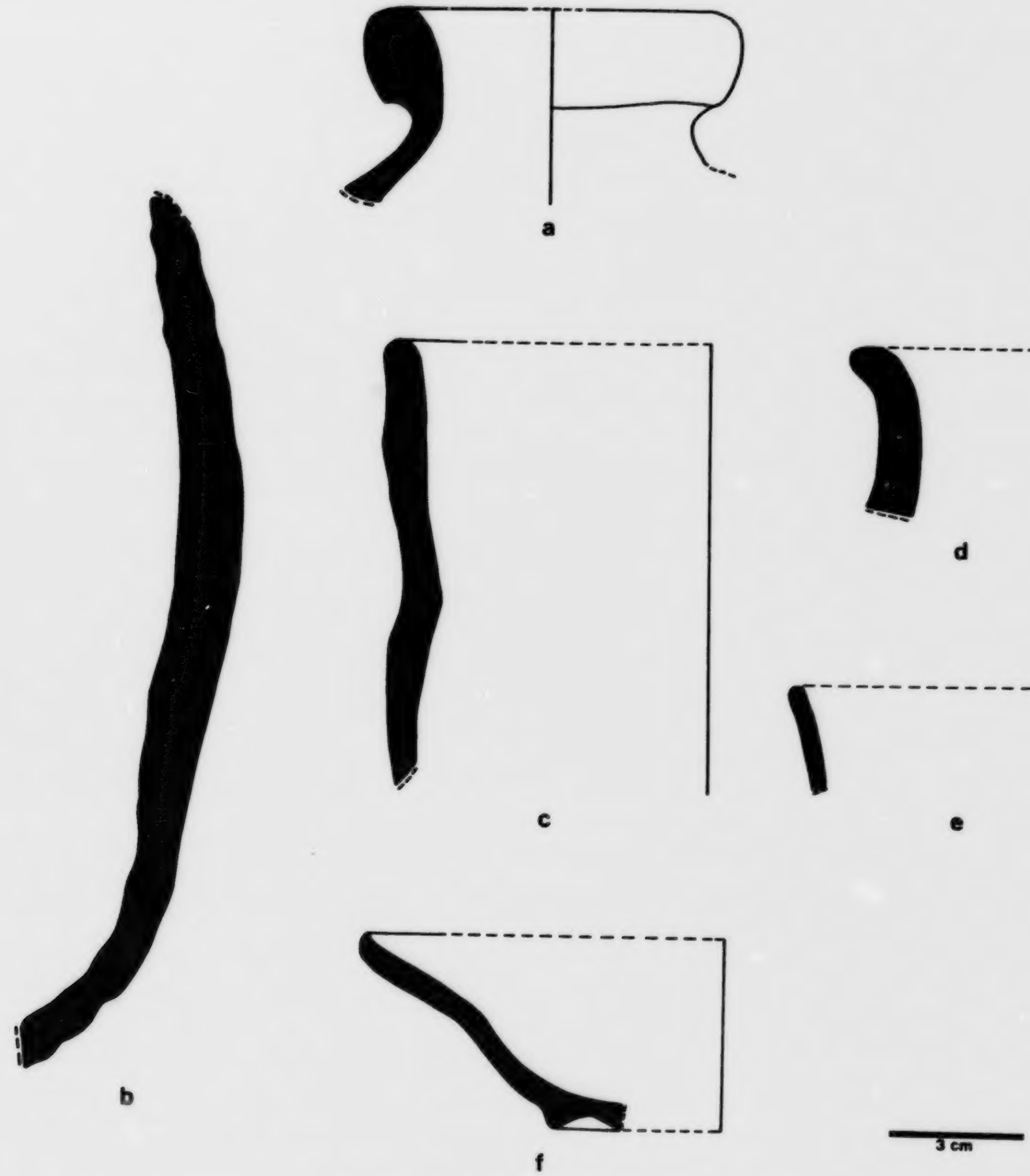

Fig. 4. Coarse earthenware from the Spanish occupation. Olive jar: a, b, 1T2C5-546; *olla*: c, 1T2R2-80; *cantaro*: d, 1T7Q40-2; *jarro: e,* 6T1W1-5; soup bowl: f, 1T3C7-379.

fabric and covered on both surfaces with a silvery opaque glaze. It has a double rim band in pale brown, 2.5YR 6/4.

Olive Jars

The olive jars were made in Spain and perhaps Mexico. These large vessels contained olives and/or olive oil. At least two examples were recovered from Yuquot.

1T2C5-546 (Fig. 3a, b, 4a, b) is a typical late-period olive jar. The fabric is hard but porous, coloured light orange (7.5YR 7/4) with fine inclusions of quartz and buff grog. The exterior is untreated, and hand and fingerprints from throwing and smoothing the vessel can be seen. The interior is coated with a thin pale green (5Y 7/3) porous slip. In Goggin's classification the collar (Fig. 3a, 4a; 1960: 19) and body (Fig. 3b, 4b; 1960: 28) are style C and date from 1780 to 1850 (1960: 62). The maximum diameter is about 22 cm, the height over 24.5 cm, and the wall thickness about 1.0 cm.

1T2F5-1761 (Fig. 3c) is also the same ware with slight differences in fabric and colouration. Such vessels are very common in Mexico and other parts of New Spain, and similar examples have even been recovered from 18th-century sites in eastern Canada.

Small Jugs or Jars

Two handle sherds and a body sherd of small jugs or jars were recovered.

1T3C3-316X (Fig. 3f): handle sherd; grey-buff (10YR 7/2) fabric with inclusions of coarse to very coarse red and pale buff inclusions. A portion of the vessel wall is attached to the handle and shows that the interior has been coated with a thin, yellowish lead glaze. The exterior is unglazed and blackened, presumably by fire.

1T1S1-60 (Fig. 3d): handle sherd; a homogeneous beige (5YR 6/4) fabric with numerous medium to granule buff inclusions and coated with a thin lead glaze; decorated with two lateral lines between which were dark brown (5YR 3/1) wavy lines painted under glaze on the exterior face.

1T6T1-281X (Fig. 3e): body sherd of a small vertical-walled vessel, diameter at least 12 cm, height more than 4.6 cm. The vessel was wheel-thrown, the body is 0.4 cm thick and made of pale orange (5YR 6/6) fabric with abundant medium to very coarse white and orange inclusions. The decoration is painted under glaze in dark brown (5YR 2/1). Both surfaces are lead-glazed.

THE NOOTKAN REOCCUPATION

Towards the end of the Spanish occupation some Nootkans resumed residence at Yuquot and when the Spanish left permanently in 1795, the Nootkans returned to their traditional practice of using Yuquot as a summer residence. It was not until the 1890s that some families took up year-round occupancy. In the meantime, European diseases had begun to take their toll. This and the attraction of towns and cannery sites for employment left Yuquot virtually deserted by the mid-1920s. About 1940, however, a new fishing cooperative encouraged many families to relocate at the village. A plumbing system, an electrical generator, and a new dock all served to make Yuquot more appealing, but by 1966, the year of excavation, the old trends were obvious again. Many families had moved or were going to move to towns, and Yuquot was fast becoming an occasional summer home for many band members.

All of the pottery attributed to the Nootkan reoccupation period was imported. Most of it was, not surprisingly, British in origin, but Chinese stoneware and porcelain as well as German-, American-, probably French- and perhaps Canadian-produced ceramics were found. As noted in the introduction, some of the British pottery items were of mid-18th- to early 19th-century provenance and, while there is no way of knowing exactly who brought them to Yuquot or who used them, they have been assigned to the Nootkan reoccupation period.

Earthenware

The earthenware category includes all wares from terra cotta to stoneware, though the latter is most commonly classed separately because of its special properties.

Creamware

The first true creamware was marketed by Josiah Wedgwood in 1759, though cream-coloured earthenware had been produced since the 1730s merely by lead-glazing white stoneware clay and firing it to a lead-glaze temperature (Griffiths personal communication). The enthusiastic reception of Wedgwood's attractive and durable ware soon forced his rivals to imitate it. It became a characteristic ware of the Staffordshire potteries though a few other potteries, in England and the United States also made it. Creamware soon displaced white salt-glazed stoneware as the popular tableware in England. It prevailed until the 1830s, but rapidly gave way as refined white earthenwares improved and became more readily available. The status and quality of creamware then declined to that of coarse cheap dinnerware and production had virtually ceased by the end of the 19th century. Still, creamware ranks as one of the highest achievements of the British ceramic tradition. It was the prototype of the still-standard refined white earthenware and was instrumental in establishing the international supremacy of the Staffordshire potteries.

Only six small creamware sherds were identified: 1T3A2-82, 1T1C4A-2, 1T3C4-329, 1T2E1-4, 1T1F4-1221, and 1T1X1-108. The fabric is porous and pale buff (2.5Y 8/2); the surfaces are slightly darker under their yellow-tinged transparent lead glazes. The glazes have undergone fine to minute crystalline or open crazing, but the fabric, which is softer than that of refined white earthenware, has not experienced the lateral flaking so often found on excavated creamware. No recognizable decoration is extant and further identification is not possible.

Of the artifacts, only 1T1C4A-2 and 1T3C4-329 are consistent with breakage and deposition at the time of probable use, that is, from the 1770s to about the 1830s.

Pearlware

A development from creamware, pearlware is characterized by a blue-tinged glaze over a whitened earthenware body; the purpose was to imitate the blue-whiteness of porcelain (Griffiths personal communication). In fact, pearlware decoration was originally copied directly from hand-painted blue-on-white Oriental porcelain. Introduced by Josiah Wedgwood about 1780, the ware was widely copied by other British potters. Pearlware persisted along with creamware until the ascendancy of harder and whiter earthenwares in the early 19th century, although versions of the ware were made as late as the 1860s (Godden 1966: xv). The pearlware fabric was as a rule much whiter than that of creamware, but early competitors of Wedgwood merely covered creamware bodies with bluish glaze. The single example of pearlware from Yuquot seems to be of this type.

1T2M2-3 (Fig. 15a): two small curved sherds, hand-painted on the concave surfaces in dark blue (5PB 3/6 to 4/6), with some of the background covered by a pale blue wash. The decoration seems to be a scene with an Oriental flavour. The glaze is thin, transparent, and faintly blue, with minute amorphous crazing. As the glaze is bluish and the fabric buff (2.5Y 8/2), much of the surface colour is a muddy grey.

Refined White Earthenware

The refined white earthenware category includes those wares variously known as "ironstone," "new stone," "semi-vitrified china," "semi-porcelain," and "stone china," as well as other white earthenware not stamped with a trade name. "Ironstone" is perhaps the most common term, but this is more specifically applied to two particular, early 19th-century, improved and harder grey-white earthenwares, one patented by John Turner in 1800 and the other by Miles Mason in 1813. Much later in the 19th century "ironstone" became a trade name stamped onto ordinary white earthenware and by then had no real meaning as a ware name (Griffiths personal communication).

Characteristically white and homogeneous, these durable wares were developed in the second and third decades of the 19th century. They were a product of the trend-setting English ceramic industry and evolved out of the same tradition whose attempts to make cheap, strong, white earthenware had produced creamware and pearlware in the 18th century. By 1840 the improved white wares had become the common but respectable table ware in the markets supplied by the British ceramic industry. They remain the dominant form of inexpensive tableware in Canada today although Britain's portion of the trade has declined since the late 19th century.

The fabrics are a pure, opaque white, though faint casts of blue or cream are not unusual. The fabric is dense and homogeneous and sometimes partially vitrified. The glazes are thin and even, often displaying crazing in fine to medium crystalline patterns. Flaking is rare and fractures tend to run in smooth curves. The shapes of the objects are common and popular today (Fig. 5) and generally need not be described.

Moulded decoration

The moulded decoration category includes tableware with no extant decoration other than mould-impressed motifs. There are two cups, 1T1F2-35 and 1T2G1-9; the former has only a few raised wavy lines and the latter has shallow vertical grooves on the outside. The one small plate, 1T1J1-31, has a wavy edge and a narrow rim band of gadroons; on the underside is part of an unidentified maker's mark in gilded italics: "Couque." Two dinner plates were found, 1T2G2-8 and 1T2M1-49; the latter is gadrooned about the brim and has a scalloped edge, but 1T2G2-8 is evidently an example of the "Ceres" or "wheat" pattern. This was usually found on sturdy tableware produced in Scotland and England and exported to western Canada in the late 19th century (Fleming 1923: 112). A version by J. & G. Meakin of Staffordshire was available through Eaton's catalogue from 1898 to 1904. Finally, two sherds of unknown form were recovered; 1T1L2A-7 is a rimsherd with a wavy edge and a meandering line of raised dots on the brim and a few raised curlicues nearby; 1T1X1-97 is a small waterworn sherd with an impressed floral motif, the glaze tinted blue-grey (10BG 6/2).

Transfer-printed decoration

Transfer-printed decoration originated in Britain during the mid-18th century when it was used under glaze on porcelain. From about 1760 printing was applied to tin-glazed earthenware and creamware on glaze and it was not until the introduction of refined white earthenware that transfer prints were applied under glaze to earthenware (Griffiths personal communication). The process consists of the transferring of designs from inked engraved metal plates to paper and from there to the ceramic object. In the first half of the 19th century the process, used extensively and effectively on refined white earthenwares, helped the Staffordshire potters to achieve the preeminence in cheap and attractive tableware that they were to enjoy for many decades. By the last quarter of the 19th century, transfer printing had become the most common decoration technique for dinnerware on the Continent and in North America as well.

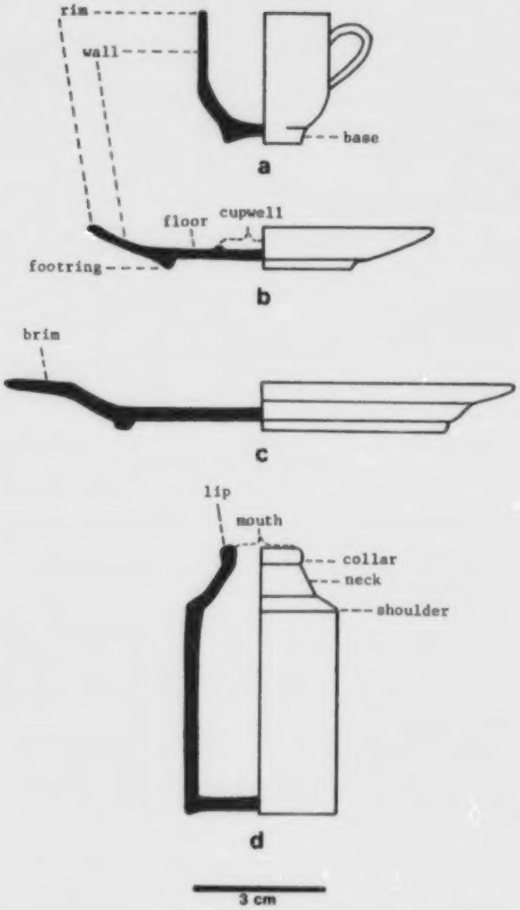

Fig. 5. Shape and nomenclature of vessels.

In the first half of the 19th century, transfer-printed decoration generally consisted of two elements, a geometric and/or floral border design around the brim or near the rim, and a central composition. Until mid-century, the latter was often a landscape, perhaps inspired by the classics, English rural life, or exotic images in the artist's imagination. The famous Willow pattern, for instance, is really an 18th-century Englishman's image of a Chinese scene, and the romantic legend is derivative from that scene. By 1860, however, the always popular floral patterns had become almost exclusively the subject of decoration and remain an important source of inspiration today.

Most of the transfer-printed wares, indeed most of the decorated tableware from Yuquot, bear floral designs. With the exception of about nine examples of the Blue Willow pattern and a handful of geometric designs, most of which are probably border fragments, all of the transfer-printed ware recovered has a floral motif.

Three of the transfer-printed objects are in the "flown blue" or "flowing blue" style, where the pigment has bled or "flown" out to give the transfer print a blurry outline and a soft surrounding shadow. The effect was induced by a concentration of volatile chlorides in the kiln atmosphere. The technique was used with other colours as well, but blue was the most common. Originating around the 1830s, the style reached its peak of popularity in Canada in the 1840s and 1850s (Collard 1967: 118), but I have seen examples dating no earlier than the 1890s. The hard whiteness of the fabric of cup 1T1F2-17 (Fig. 6e), plate 1T1F2-16 (Fig. 8b), and washbasin 1T2M1-51 (Fig. 8i, j) suggest at least a post-1850 date.

Cups. Some 24 cups were recovered, seven of which were too fragmentary for worthwhile description: 1T1G6-35, 1T2G1-8, 1T2G5-5, 1T2H2-24, 1T2K2B-59, 1T1M1-9, and 1T1X1-130. The average diameter of all the cups is 9 cm and the standard base or foot ring is the same as that of 1T2G6-1302 (Fig. 5, 6f).

1T3A7-235 (Fig. 6b): the colour is deep cobalt blue (7.5PB 2/6); a small plate, 1T1B1-17, has the same decoration.

1T1B1-18 (Fig. 6c): the colour is dull red (5R 4/6).

1T2B1B-10: only a delicate tendril of 7.5BG 5/2 grey-green remains; the exterior surface is undulating, broad vertical valleys alternating with narrow valleys; the footring diameter is 5 cm. Part of the maker's mark is legible, printed underglaze in dark grey, 2.5PB 3/2: an "11" to one side and, in the centre,

O CE...
SEMI POR[CELAIN]

1T1E2-6 (Fig. 6d): there is a Greek Key rim band on the interior; the colour is deep blue (7.5PB 3/2). Two other cups with the same pattern in different colours were found: 1T2J1-38 in red-purple (7.5RP 4/8), and 1T1X1-64 in pale blue (2.5PB 5/10).

1T1F2-17 (Fig. 6e): the colour is deep cobalt blue (7.5PB 3/10) and the decoration is "flown blue."

1T2G6-1302 (Fig. 6f): the colour is medium blue (7.5PB 4/8) with darker concentrations. The maker's mark on the base is

W & H
ENGLAND

The firm may be Wood & Hulme of Burslem, Staffordshire, whose factory was in operation from 1882 to 1932 (Godden 1964: 341); indication of the country of origin suggests a post-1890 date of manufacture.

1T2H2-23 (Fig. 6a): the colour is light blue (5PB 4/10).

1T2H2-25 (Fig. 6g): the colour is red-brown (7.5R 4/4). Another cup, 1T2H3B-4, has the same pattern, but in blue-green (5BG 4/4).

1T2H2-32 (Fig. 6h): there is also an interior rim band of small chevrons pendant on a line; the colour is medium brown (5YR 4/4). Another cup with the same decoration is 1T3C1-10.

1T2H3B-3 (Fig. 6i): the interior has a rim band, the same as on the exterior; the colour is red-purple (10RP 4/8). Cup 1T2B1A-9, plate 1T3C1-6, and two unknown forms, 1T2M1-46 and 1T1X1-69, have the same decoration; cup 1T3A2-88 has the same pattern, but in medium brown (5YR 4/6).

1T1W1-3 (Fig. 6j): the colour is dark green (5BG 3/4).

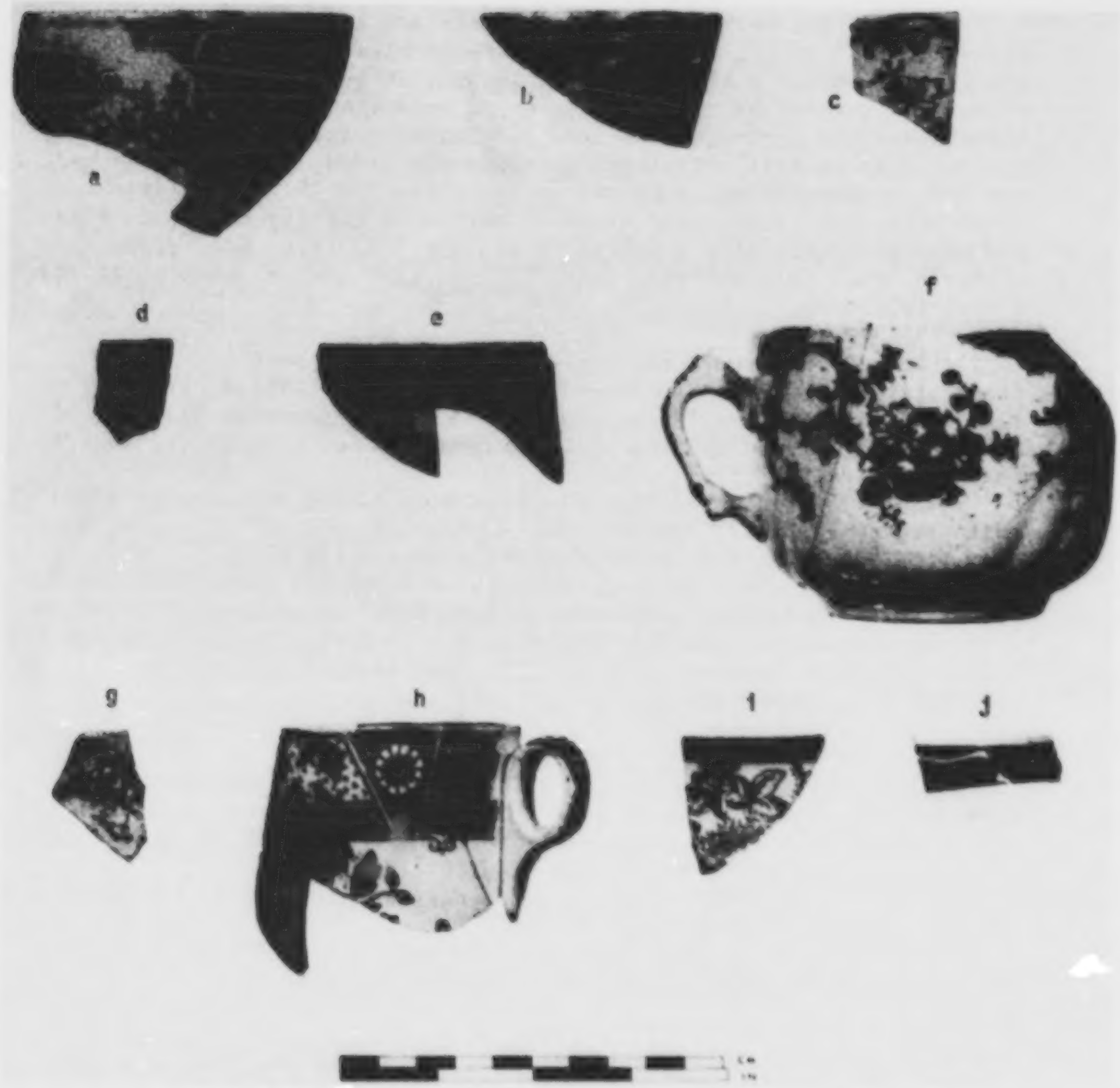

Fig. 6. Transfer-printed white earthenware cups. a, 1T2H2-23; b, 1T3A7-235; c, 1T1B1-18; d, 1T1E2-6; e, 1T1F2-17; f, 1T2G6-1302; g, 1T2H2-25; h, 1T2H2-32; i, 1T2H3B-3; j, 1T1W1-3.

Saucers. About ten saucers were found, two of which, 1T1H4-19 and 1T1X2-95, are too fragmentary to depict. Saucer diameters average 15 cm, and the heights, from four measurable fragments, average about 2.5 cm. There are three examples of Blue Willow: 1T2A2-74, 1T2H2.21 (Fig. 7e), and 1T1X1-62.

1T1C1-3 (Fig. 7c): the colour is deep cobalt blue (7.5PB 3/8) and the maker's mark is GERMANY, indicating a post-1890 date of manufacture.

1T2G4A-29 (Fig. 7a): the colour is blue-grey (5PB 6/4 to 3/4).

1T2G4A-43 (Fig. 7b): the colour is deep blue-grey (5PB 3/1 to 4/2) and the maker's mark is a crown surmounted by SEMI-PORCELAIN. Below the crown is

MELLOR TAYLOR & Co
ENGLAND

This mark was used from 1880 to 1904 (Godden 1964: 432), but use of "England" is post-1890; hence the date of manufacture is between 1891 and 1904.

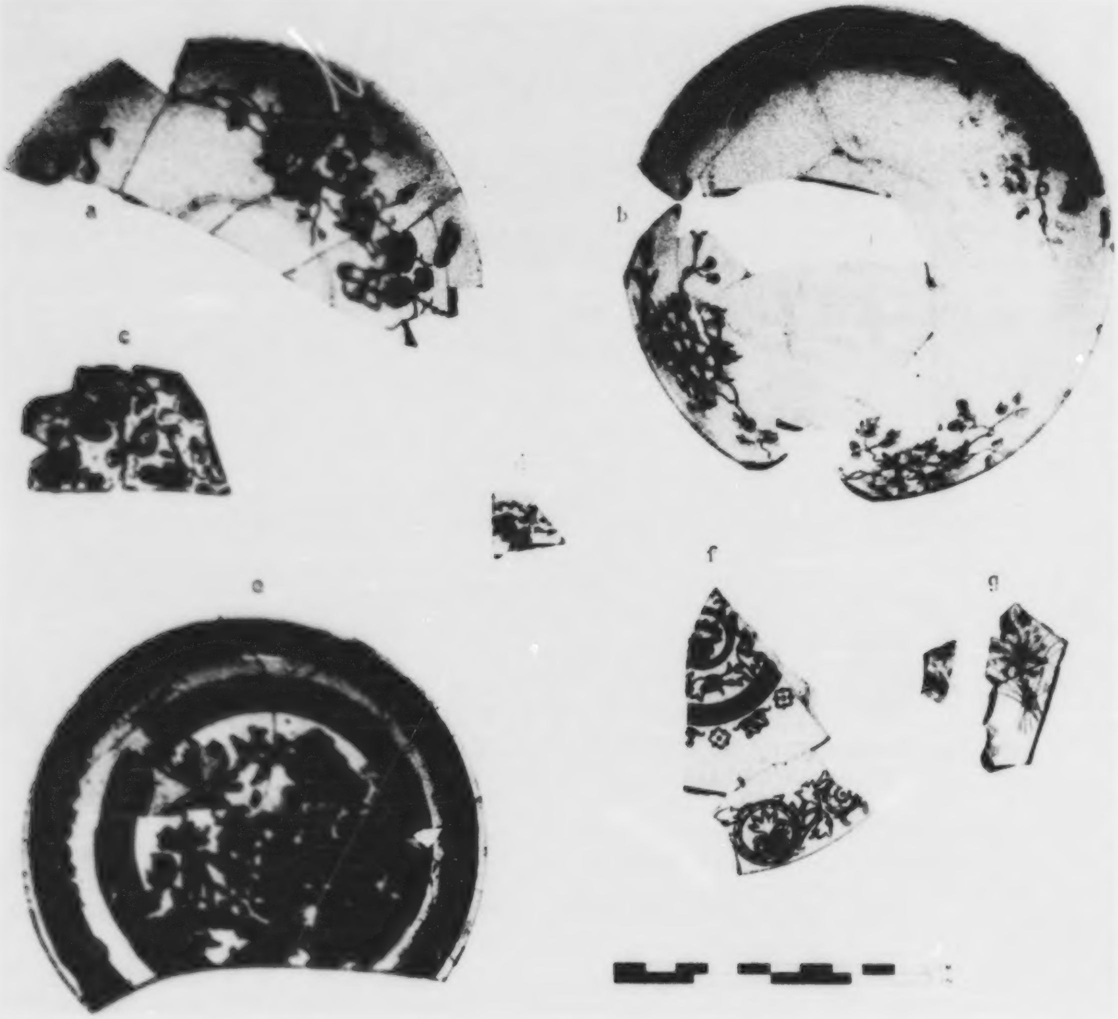

Fig. 7. Transfer-printed white earthenware saucers. a, 1T2G4A-29; b, 1T2G4A-43; c, 1T1C1-3; d, 1T2J3A-2; e, 1T2H2-21; f, 1T1W1-2. Printed and painted white earthenware saucer: g, 1T1J1-27.

1T2J3A-2 (Fig. 7d): the colour is bright green (2.5G 4/4).

1T1W1-2 (Fig. 7f): the colour is dark brown (10R 2/2); the maker's mark is

Rd No 37912
BAYARD
THOMAS HUGHES
LONGPORT

Longport is in the area of northern Staffordshire known as "The Potteries." Use of registration numbers began in 1884 and this number was reached by January 1886 (Godden 1964: 527), but, as the country of origin is not declared, the saucer probably pre-dates 1891, and hence is from the 1885 to 1890 period.

Printed and painted decoration

1T1J1-27 (Fig. 7g) is printed over glaze in a fine lithograph-like technique. The bunched 12-petalled flowers are pink (5R 6/6) with yellow (5Y 8/8) centres with brown (2.5YR 3/4) accents; the stems are green (5GY 6/4) with accents of 5GY 5/4 green; the 12-petalled flowers with rounded petals are yellow accented in brown, and the five-petalled flowers are pink; the pink and brown are printed, the yellow and greens painted.

Small plate. A small plate, 1T1B1-17, has the same decoration as cup T2A7-235, though the colour is slightly lighter. The maker's mark is

... LIAIN
ADAMS
[T]UNSTALL

Tunstall is near Stoke-Upon-Trent, Staffordshire. The mark is similar to Godden's pattern 29 (Godden 1964: 22) which would date it from 1879 to the 20th century, though lack of country of origin indicates a pre-1891 date of manufacture, hence 1879 to 1890.

Plates. An estimated 14 plates were found. Diameters of those measurable were about 25 cm. Three examples of Blue Willow were found: 1T3C2A-2, 1T1F2-18, and 1T2L3A-3. 1T3C1-6 has the same decoration as cup 1T2H3B-3. 1T1B1-19, 1T1K2A-26, 1T1L2B-5, and 1T2L1-29 are too fragmentary to merit description and 1T1X1-68 has only a few serrated-edge scrolling leaves in red-purple (7.5RP 4/10) on the brim.

1T3C1-7 (Fig. 8a) is an irregularly waterworn brim sherd with traces of violet (5PB 5/6) transfer-printed lines.

1T1F2-16 (Fig. 8b): the colour is deep blue (7.5PB 3/6) in "flown blue."

1T1F3B-3 (Fig. 8c): the colour is red-purple (7.5RP 4/10), but the sherd has been burnt.

1T1L2A-6 (Fig. 8d): the colour is purple (2.5P 4/8).

1T1U1-200 (Fig. 8e): the colour is light brown (5YR 4/6) with the lower point painted yellow-green (7.5GY 7/8).

Bowls. 1T2G6-1389 (Fig. 8f): this is the "Foliage" pattern, printed in dark grey; it was used by more than one company, among them the Old Hall Earthenware Company from 1861 to 1886, as such a bowl was

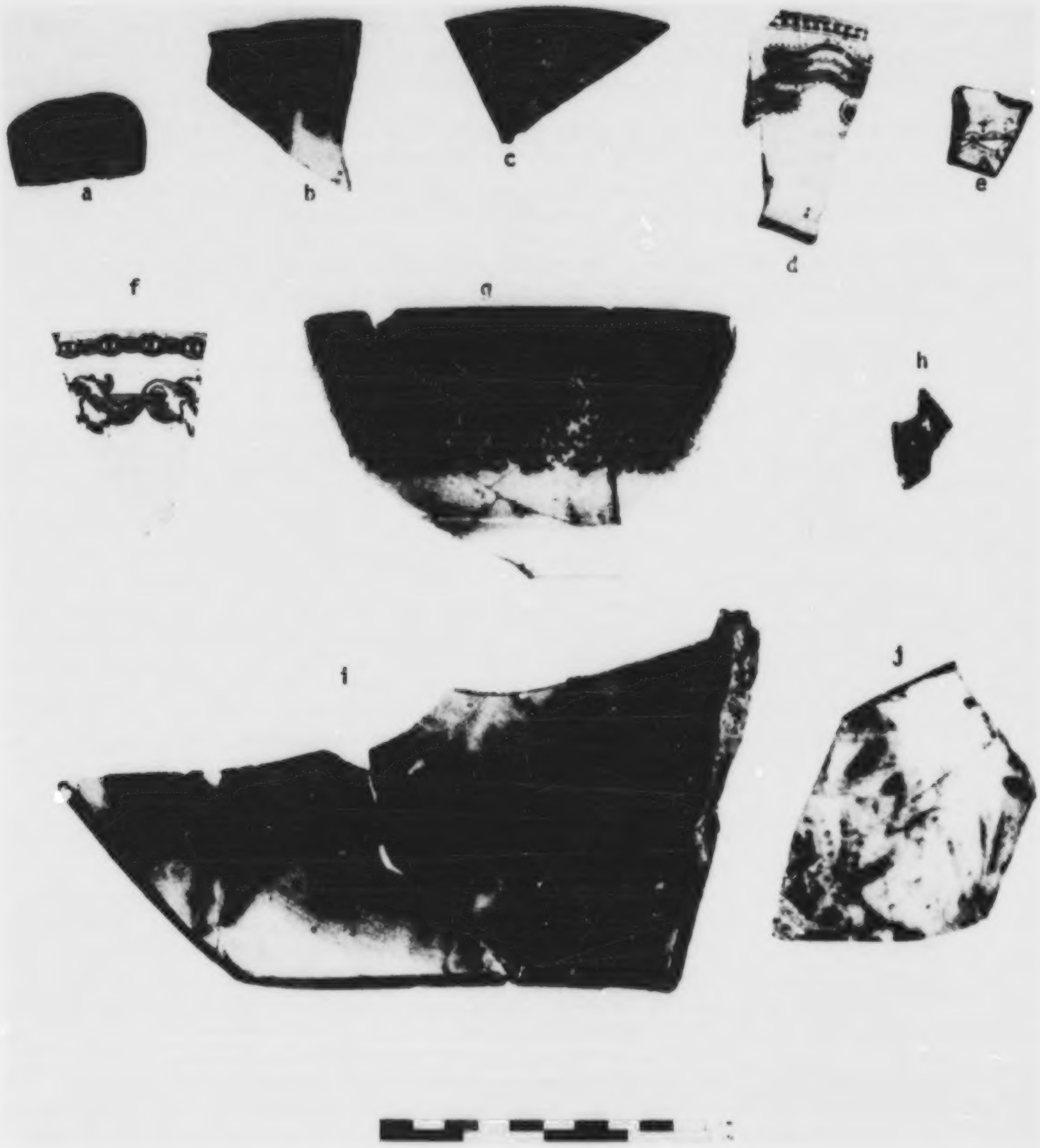

Fig. 8. Transfer-printed white earthenware. Plates: a, 1T3C1-7; b, 1T1F2-16; c, 1T1F3B-3; d, 1T1L2A-6; e, 1T1U1-200. Bowls: f, 1T2G6-1389; g, 1T2H2-22. Washbasin: i, j, 1T2M1-51. Unknown form: h, 1T2K1-36.

recovered from Lower Fort Garry in Manitoba (Sussman 1972).

1T2H2-22 (Fig. 8g): the colour is deep cobalt blue (7.5PB 3/8) with meandering lines of on-glaze gilding. The solid blue areas were painted by hand. The maker's mark is ...MANY, presumably GERMANY, which could date the bowl post-1890. A sherd from a different but unidentified object, 1T1E3-9, has the same decoration.

Washbasin. 1T2M1-51 (Fig. 8i, j): the decoration is a water lily pattern in the "flown blue" style in deep blue (7.5PB 3/8). The maker's mark is

COPELAND
... NT

an identified mark of the famous Copeland pottery of Stoke-on-Trent, Staffordshire, successor to Spode and in operation from 1847 to date (Godden 1964: 171).

Unknown form. Remains of an additional 26 objects were recovered, including three examples of Blue Willow, an object of the same decoration as bowl 1T2H2-22, and another the same as cup 1T2H3B-3. 1T2K1-36 (Fig. 8h) is coloured in blue-green (5BG 4/6). The rest of the sherds are small fragments bearing floral designs similar to those illustrated.

Stamped decoration

Stamped decoration was found on about 60 objects. Stamped pottery is often called "sponged ware" in Britain, "spatterware" in the USA, and, in eastern Canada, "Portneuf" after a Quebec village in the mistaken assumption that it was made there.

> Portneuf pottery can be described as simple pottery for use on table and in toilet, decorated in vivid colours by sponge and band painting, generally having no maker's marks, exported from Great Britain and particularly from Scotland to Canada in a period from about 1840 to 1920 and distributed in the main from Quebec City and Montreal to the settlements on the banks of the St. Lawrence River" (Finlayson 1972: 52-53).

Simple motifs and garish colour combinations further characterize the style. In stamping, the pigment was applied with a stamp or stencil cut from cork or the dense stalk of a sponge, though the term "sponging" is better reserved for mottled decoration applied with a soft sponge. The stamped shapes were usually florets or simple geometric forms. Rim banding almost always accompanied stamping, hand-painting was also often used for larger shapes and accents, and sometimes amorphous sponge-dabbing or spattering was used for background. Most of this pottery was made in Scotland, but England and even France and Belgium are said to have produced some.

The vessel shapes are essentially identical to those of transfer-printed pottery, but the bodies tend to be thicker and the fabric coarser and more porous. This presumably reflects the inexpensive and serviceable nature of the ware. The stamping "is usually forceful in design, and executed on plain but good forms evidently destined for the rank and file of working folk" (Fleming 1923: 65). Jewitt (1878: 564) notes that the ware was chiefly admired in the world's "out-markets," which would certainly include the Northwest Coast in the late 19th century.

Several southern and southwestern Alaskan sites have yielded stamped pottery very similar to that from Yuquot (Ackerman 1965: fig. 15: 5, 6; VanStone 1968: Plate 8: 7, 8; VanStone 1970: Plate 13: 6, 10, 13, 15, 17, 19-24, 26, 27; Oswalt and VanStone 1967: Plate 13b; VanStone and Townsend 1970: Plate 16: 9). For various reasons, most of the Alaskan sites were abandoned around 1900 and the pottery was likely deposited in the late 1800s. VanStone (1970: 80) cites a personal communication from Bernard Fontana stating that such pottery was common in frontier areas of the American West, especially the Southwest, where it generally predated 1880; however, Finlayson (1972: 55) dates the peak of Scottish stamped ware production at 1880 to 1910 and, as far as Canadian imports are concerned, Collard seems to agree (1967: 146-7). It is thus reasonable to infer that stamped ware was readily available from merchants on the Northwest Coast during the last quarter of the 19th century and the first decade of the 20th.

Cups. At least 15 cups were recovered. A possible 16th, 1T1E1-2, has only a mauve rim band extant. Two of the cups, 1T2G2-4 and 1T1M1-12, have only traces of decoration extant. Cups 1T1F2-21, 1T1K2A-29, and 1T1L1A-22 all have the same decoration as saucer 1T2G4A-31 (Fig. 9m). The diameters of the cups average about 10 cm, slightly wider than the transfer-printed cups.

1T1A1-20 (Fig. 9a): there is also a rim band on the interior; the colour is monochromatic violet (10PB 5/6).

1T2A2-42 (Fig. 9b): there is a black interior rim band, the exterior rim band is purple (2.5P 3/4), the ovals are green (5BG 3/5).

1T3A1-52 (Fig. 9c): there is an interior rim band in red-purple (10RP 4/6), the exterior rim band is slightly paler; the three-lobed shapes are painted green (2.5BG 3/4) and a few traces of blue (2.5PB 5/8) indicate petals of tiny stamped flowers.

1T1C1-6 (Fig. 9d): the colour is red-purple (2.5R 4/10).

1T2E3-5 (Fig. 9e): the rim band is red-purple (2.5R 3/8) between two black lines; the six-petalled flowers are the same purple, the Maltese Cross-like flowers are green (7.5GY 8/7).

1T1F4-3 (Fig. 9f): there is a red-purple (2.5R 3/8) rim band on the interior, the flowers on the exterior are blue (7.5PB 3/8).

1T2F4-3 (Fig. 9g): the colour is red-purple (2.5R 5/6). 1T1G6-2 (Fig. 9h): there are interior and exterior rim bands in red-purple (7.5RP 6/8); the flower stalks are also red-purple and are painted, as are the yellow-green (10GY 7/6) leaves; the stamped flowers are green (2.5GY 3/2).

1T1K2A-31 (Fig. 9i): only one colour is extant, a dull red: 2.5R 5/8; there is also an exterior rim band.

1T1X1-94 (Fig. 9j): there is an interior rim band in red-purple (2.5R 4/10); the exterior rim band is blue-green (5BG 3/4) with a red-purple band beneath it; the flowers are violet (10PB 4/4).

Saucers. At least five saucers were found. A probable sixth, 1T2K2A-54, has only blue-green rim bands remaining of its decoration. The average diameter is about 16 cm and the three examples of foot rings are the standard form illustrated in Fig. 5.

1T2E2-1028X (Fig. 9k): the rim band is red-purple (2.5R 3/7); the

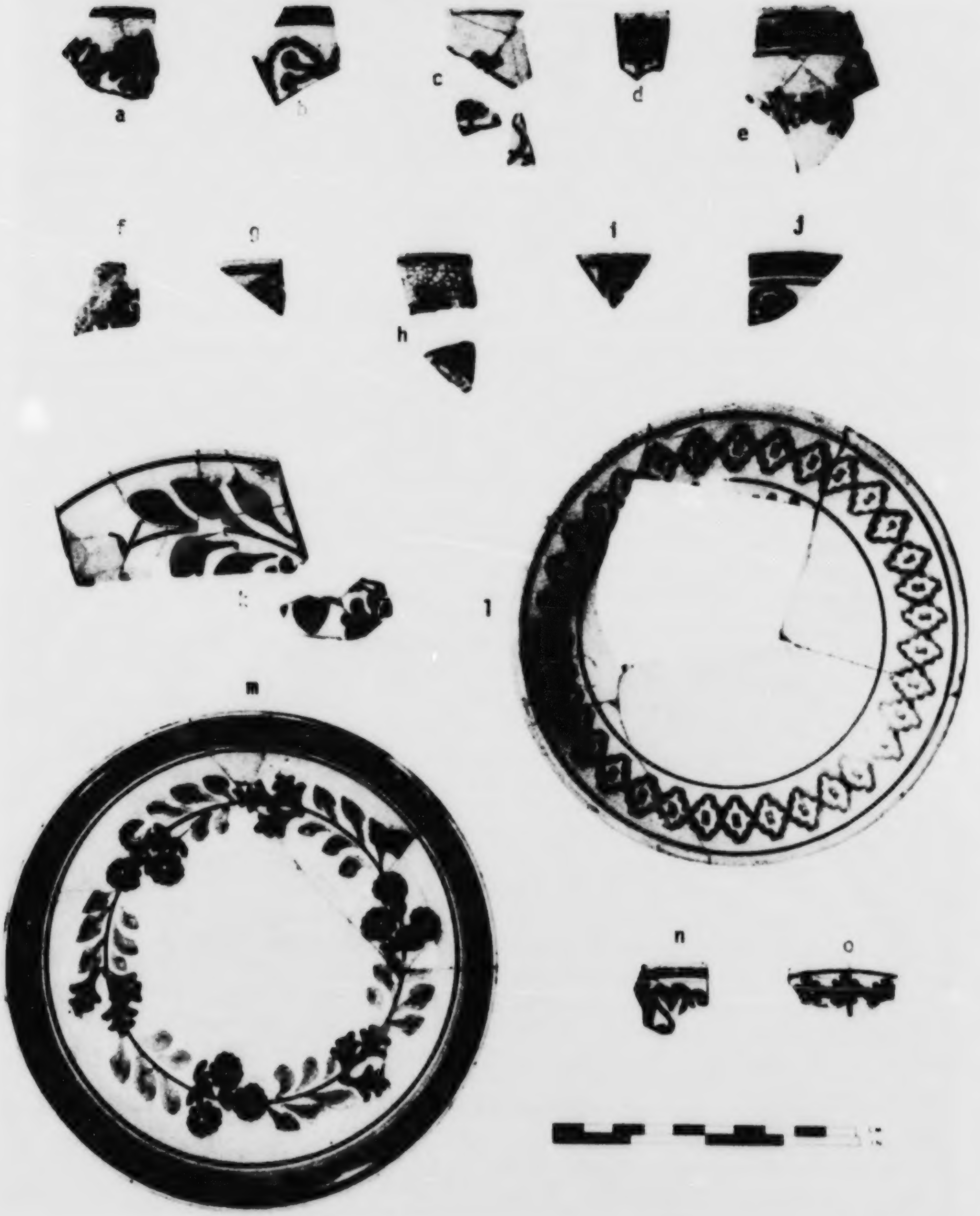

Fig. 9. Stamped white earthenware. Cups: a, 1T1A1-20; b, 1T2A2-42; c, 1T3A1-52; d, 1T1C1-6; e, 1T2E3-5; f, 1T1F4-3; g, 1T2F4-3; h, 1T1G6-2; i, 1T1K2A-31; j, 1T1X1-94. Saucers: k, 1T2E2-1028X; l, 1T2G3-1378; m, 1T2G4A-31; n, 1T1L1C-21; o, 1T1L1C-24.

stem is black; the rimward leaves are painted green (7.5G 3/4), the inner leaves red-purple; the large flower is painted yellow (5Y 8/8) and the small stamped shapes are deep blue (7.5PB 3/10).

1T2G3-1378 (Fig. 9l): the rim bands are bright blue (2.5PB 5/10) and the stamped lozenges are greyish mauve (5R 6/4).

1T2G4A-31 (Fig. 9m): the outer rim band is maroon (2.5R 3/6), the central band deep blue (2.5PB 4/8), the inner band yellow (5Y 8/8), the dark line within that is maroon, the innermost circular line that the leaves and flowers straddle is black; the flaring lanceolate leaves are painted yellow-green (10GY 7/8); the five-pointed stamped leaves or blossoms are maroon, the dark stamped florets are dark blue (5PB 4/6). Similar examples have been noted in eastern Canada and in southwestern Alaska. Cups 1T1F2-21, 1T1K2A-29, and 1T1L1A-22 and unknown form 1T1X1-91 have the same decoration.

1T1L1C-21 (Fig. 9n): the outer rim band is maroon (2.5R 3/6), the inner band somewhat paler; the dark shapes are painted or stamped green (10G 3/4).

1T1L1C-24 (Fig. 9o): the rim band is maroon (2.5R 3/6) and the cogged squares are dark brown (2.5YR 2/4).

Small plate. Only a burnt base sherd of a small plate, 1T1J2-23, with the remains of a stamped blue oval, was recovered.

Plates. At least six plates were recovered. One, 1T2K2A-49, has only a few traces of maroon left on a rimsherd. A probable seventh plate, 1T1X2-14, has only part of a mauve band remaining on a floor sherd. Diameters average 25.5 cm.

1T2G1-979 (Fig. 10a): the background blotches, painted or sponged, are pale red-purple (2.5R 5/8); the oak leaves are stamped in dark green (10G 3/4).

1T1J1-28 (Fig. 10b): the oak leaf is blue (7.5PB 5/8) and the star or floret is deep green (2.5BG 4/4); there are also traces of mauve (10RP 7/6).

1T1M1-13 (Fig. 10c): the rim band is violet (7.5PB 2/4), the line within that is slightly paler; the stamped shapes are red-purple (10RP 4/8).

1T1X2-12 (Fig. 10d): the outer rim band is blue-green (5BG 3/6) and the inner band is purple (10RP 6/6); the stamped flowers are medium blue (2.5PB 5/6).

1T1X2-16 (Fig. 10e): the little florets are red-purple (10RP 4/6), the rim band and enclosing figures are medium brown (2.5YR 3/4).

Bowls. At least six bowls were recovered, with sherds of a possible eight more bearing bands of familiar shades of green, blue, and purple: 1T1B1-21, 1T1B1-23, 1T1C1-9, 1T1E2-1364, 1T2E2-1029X, 1T2H2-28, 1T1X1-99, and 1T1X2-18. Diameters average 15 cm.

1T1A1-21 (Fig. 10f): the stamped floret is deep blue (7.5PB 3/4) and the extant tip of a painted leaf is purple (10RP 3/8).

1T2E1-966 (Fig. 10g): the bands are red-purple (2.5R 4/10) and the florets are blue-violet (7.5PB 4/10).

1T1H4-20 (Fig. 10h): the colour is deep blue (7.5PB 3/8) and the decoration covers both the exterior and interior of the sherd.

1T1H4-21 (Fig. 10i): the colour is deep green (2.5BG 3/4).

1T1X1-90 (Fig. 10j): the broad band is green (2.5BG 3/4), the dark lines are black, and the stamped flowers are greyish mauve (2.5R 5/8). Unknown forms 1T1M1-14 and 1T1K2A-50 have the same decoration.

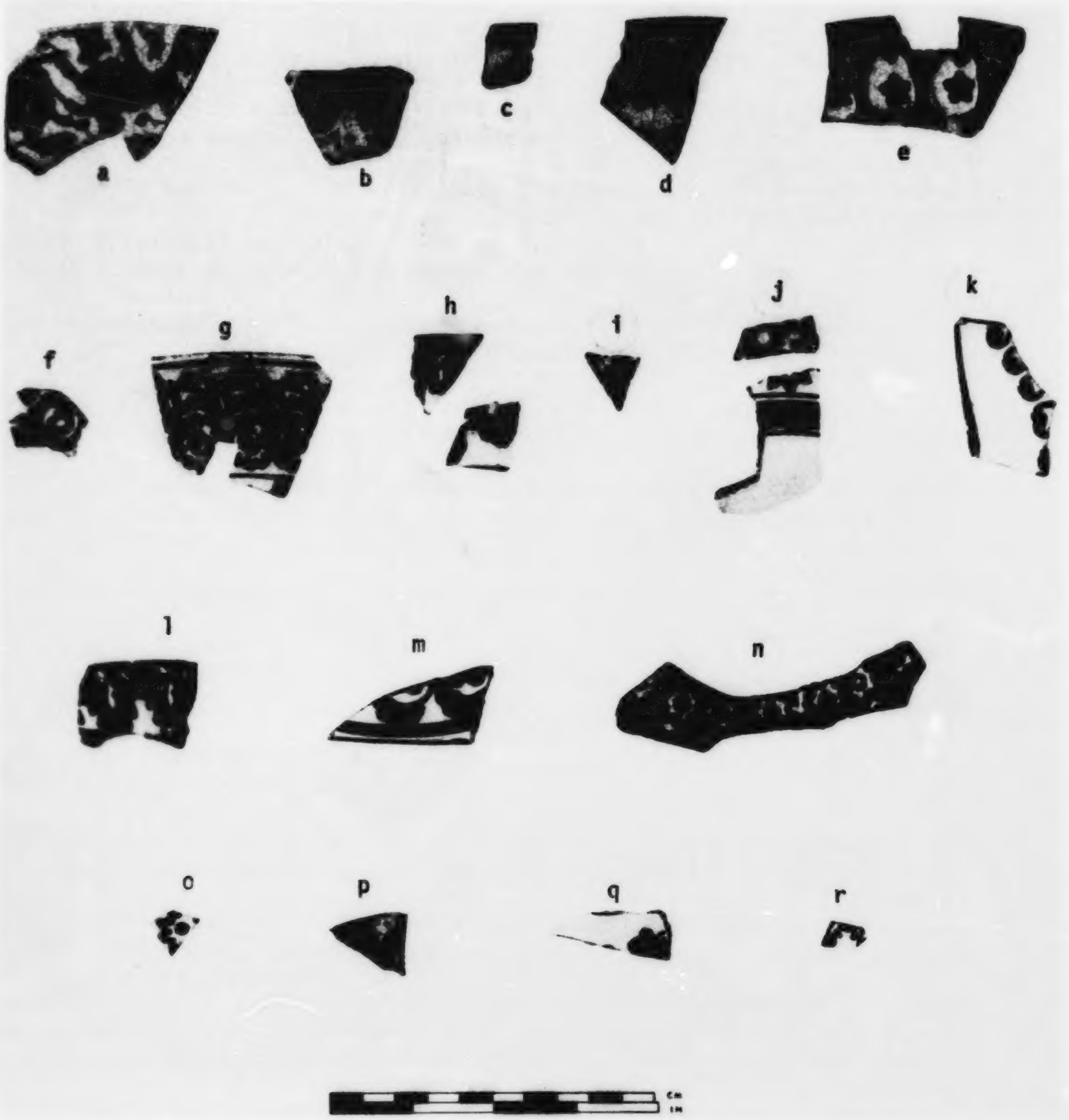

Fig. 10. Stamped white earthenware. Plates: a, 1T2G1-979; b, 1T1J1-28; c, 1T1M1-13; d, 1T1X2-12; e, 1T1X2-16. Bowls: f, 1T1A1-21; g, 1T2E1-966; h, 1T1H4-20; i, 1T1H4-21; j, 1T1X1-90; k, 1T1X1-98. Large bowls: l, 1T2H3B-5; n, 1T1X1-93. Unknown forms: m, 1T2K2B-50; o, 1T3A1-57; p, 1T1G5-5; q, 1T1G6-3; r, 1T1L1C-54.

1T1X1-98 (Fig. 10k): the colour is deep green (10G 3/4), apparently painted, but the style tends to ally it with the stamped material.

Large bowls. A rimsherd, 1T2G2-3, may have been from a serving bowl or platter; it has only a trace of a red-purple rim band extant, but two other objects are believed to have been serving bowls.

1T2H3B-5 (Fig. 10l): the stamped oak leaves are deep blue (7.5PB 3/8); diameter very approximately 30 cm.

1T1X1-93 (Fig. 10n): a floor/base sherd; the colour is medium blue (7.5PB 3/8).

Unknown forms. A further nine stamped objects were identified; another four retain only bands in purple, violet, and yellow. 1T1K2A-50 and 1T1M1-14 have decoration the same as bowl 1T1X1-90, and 1T1X1-91 is the same as cup 1T2G4A-31. 1T1L1C-25 has only traces of stamped shapes.

1T3A1-57 (Fig. 10o): the small star or floret is deep blue (2.5PB 6/8) and has a yellow (2.5Y 7/8) spot in the centre.

1T1G5-5 (Fig. 10p): the colour is deep blue (7.5PB 3/8).

1T1G6-3 (Fig. 10q): the colour is red-purple (10RP 4/6).

1T2K2B-50 (Fig. 10m): the colour is deep blue (7.5PB 3/8).

1T1L1C-54 (Fig. 10r): the colour is mauve (2.5R 5/6).

Banded decoration

Banding is a simple specialization of painted deocration: a brush held in one position against an object is used to convey pigment to it while the object is turning on a bander's wheel. One or more bands may be applied. Slips could also be used as a banding medium, either raw or mixed with pigment. If thin, slips could be applied by brush, if thicker, trailed through quills or applied by a mechanical process. Three groups were formed from the Yuquot material: small multi-banded utility bowls, "hotel china," and simple rim-banded tableware.

Multi-banded utility bowls. The small multi-banded utility bowl group is by far the largest and consists of some 50 examples. These are all small bowls intended for kitchen use, diameter about 15 cm, capacity 580-680 cm^3 or about one imperial pint. The fabric is usually very dense and the glazes have seldom crazed.

Multi-banded decoration is particularly suitable for bowls and is found on none of the flatter objects from Yuquot. These bowls were likely bought individually or in sets, but not as members of similarly styled dinner services. Their decoration is always on the exterior, always under glaze, and usually consists of blue bands, often with brown or green bands as well. Most examples have narrow bands of slip about 0.2 cm wide, thickly applied and tangible as smooth low ridges. Painted on and usually consisting of just the pigment, the broader bands are more thinly applied and can rarely be felt. Sometimes the proximity of vessels stacked together during firing has left shadows of vaporized pigment on the inner surface of the bowl stacked beneath. These stains, faint reproductions of the decoration, may give a false impression of translucent porcelain at first glance.

No manufacturer's mark was found on any specimen, and such recent and mundane pottery has received virtually no attention in the literature on ceramic history. In view of the high technological quality of this pottery, the nature of the other ceramics associated with it, and the history of the site, we can infer a production span from roughly 1880 to about 1920, and probably a British, though possibly an American or continental European, origin. These banded bowls may be viewed as more refined alternatives to the banded yellow earthenware that served Canadians as common kitchen crockery from the mid-19th to the early 20th centuries.

Twenty-seven of the multi-banded bowls conform to a fairly standard type (Fig. 11a, b, c, 12a, b): one or two broad blue bands, each 1.0-3 cm wide and usually coloured 2.5PB 5/8, are flanked by one, two, or three narrow dark brown bands that are about 0.2 cm wide and range from 2.5YR 2/4 brown to black. These include: 1T1A1-25, 1T2A2-43, 1T3A1-25, 1T3A1-53, 1T1B1-24, 1T1E2-8, 1T1G3-14, 1T1G4-1766 (Fig. 11b), 1T2G2-6, 1T2G4A-33, 1T2G4A-34 (Fig. 11a, 12a), 1T2G6-3, 1T1H3-23, 1T2H2-31, 1T1J1-29, 1T1K2A-33, 1T1K2A-34, 1T1M40-3, 1T1X1-103, 1T1X1-104, and 1T1X2-23.

The other six blue-and-brown-banded bowls, 1T1C1-8, 1T1G6-4, 1T2G4A-35 (Fig. 11c), 1T1K3A-4, 1T2K2A-53, and 1T1L6B-1, have sets of three white wavy slip bands over the broad blue band; the blue band is flanked by sets of either two or three dark brown bands.

Of the shapes of the first 21 blue-and-brown-banded bowls, 1T2G4A-33 and 1T2G4A-34 (Fig. 12a) are similar, that is, they have

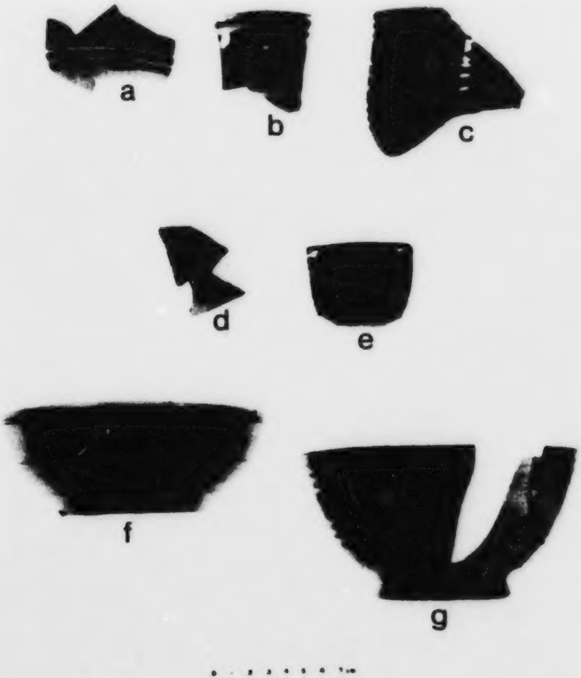

Fig. 11. Banded white earthenware bowls. a, 1T2G4A-34; b, 1T1G4-1766; c, 1T2G4A-35; d, 1T1B1-25; e, 1T1E3-11, f, 1T1X1-101; g, 1T2G6-1303.

angled rather than curved outer walls. Most of the rest and all those with wavy white slip bands are similar to Fig. 12b.

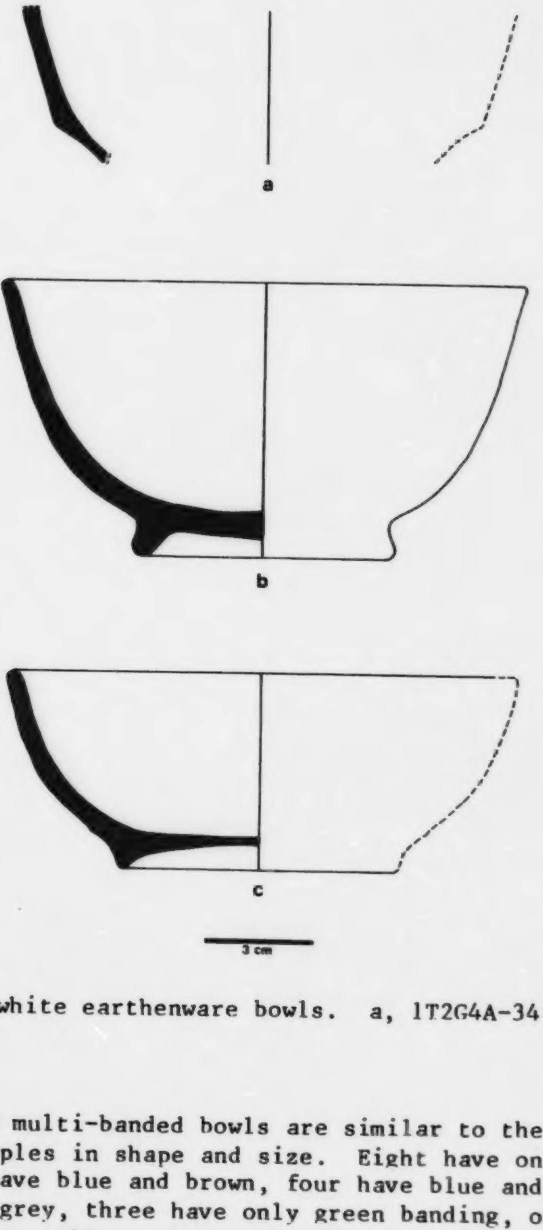

Fig. 12. Banded white earthenware bowls. a, 1T2G4A-34; b, 1T2F5-1763; c, 1T1X1-101.

The other 23 multi-banded bowls are similar to the blue- and brown-banded examples in shape and size. Eight have only blue banding remaining, five have blue and brown, four have blue and green, one has blue, brown, and grey, three have only green banding, one has only brown extant, and one has yellow and brown. The blues are around 2.5PB 5/8, the browns are dark, and the greens vary from dark to bluish to greyish. 1T2G6-1303 (Fig. 11g) and 1T2F5-1763 (shown in cross section, Fig. 12b) are almost identical, differing only in banding sequence; the broad band is greyed blue-green (5BG 4/2) and the narrow bands are blue (5PB 4/10). The broad bands of 1T1B1-25 (Fig. 11d) are dark brown (2.5YR 2/2), the narrow bands are blue (2.5PB 4/8). The banding of 1T1A1-29 is the same, only the broad bands are blue and the narrow are brown.

The rest of the bowls are: 1T1A1-26, 1T1E2-7, 1T1E3-10, 1T1G4-13, 1T1G4-14, 1T1G4-6, 1T1G5-7, 1T2G2-5, 1T2G2-7, 1T2G4A-32, 1T2G6-2, 1T2J1-40, 1T1K2A-32, 1T2K2A-55, 1T2L1-31, 1T1X2-21, 1T1X2-22, and two 1T1X1 examples. Only 1T1G4-13 is similar to Fig. 12a, that is, it has an angled outer wall; the rest are apparently like Fig. 12b.

Hotel china. Seven objects were included as "hotel china": thick, durable, semi-vitrified tableware with simple rim-banded under-glaze decoration, usually in green. Like most of the Yuquot ceramics, these examples bear or retain no makers' marks; however, as they share the same context as datable ceramics, they should be tentatively assigned to the 1880-1920 period.

Cups. Two cups were identified: 1T1F2-24 is represented by only a handle sherd with a line of blue-green (5BG 3/6) up the middle and 1T1X2-20 is similar to saucer 1T3C1-11, but the band colour is grey-blue (10B 4/4).

Saucers. There are two saucers, diameters about 15 cm; 1T3C1-11 has a double rim band, the outer band narrow and the inner band merely a line, in dark blue-green (5BG 3/4). 1T1X2-24 is similar, but the colour is red-purple (10RP 4/8).

Bowls. There are three bowls, diameters about 14.5 cm; 1T2H2-41 has decoration similar to saucer 1T3C1-11.

1T1E3-11 (Fig. 11e): the colour is dark green (2.5BG 3/4).

1T1X1-101 (Fig. 11f, 12c): the colour is blue-green (10BG 5/6).

Rim-banded tableware. Four items of tableware with simple under-glaze rim-banding were recovered: 1T1X1-105 is a cup with a thin interior rim band and an exterior triple-line rim band in bright blue (5PB 4/10); 1T1X2-104 is a saucer with a light brown (7.5YR 4/2) rim band, diameter about 15 cm; 1T2M2-31 is a small plate with a deep blue (7.5PB 2/6) rim band bounded by on-glaze gilded lines, diameter at least 15 cm; and 1T2F3A-3 is a serving bowl with one narrow brown (2.5YR 3/4) rim band extant, diameter about 26 cm.

Under-glaze hand-painted decoration

Hand-painting is a simple method of applying pigment, and these examples of hand-painting include at least three different styles. As previously pointed out, much of the stamped pottery was painted as well and some of the painted objects seem related; for example, compare cup 1T1F2-22 (Fig. 13a), saucer 1T2K2B-52 (Fig. 13b), and bowl 1T2H2-29 (Fig. 13c) to stamped saucers 1T2E2-1028X (Fig. 9k) and 1T2G4A-31 (Fig. 9m). The large bowls or basins 1T1M6-1939 and 1T2M4-1636 would fit comfortably in a late Victorian collection, and saucer 1T1K2A-25, from Japan, might have been produced in the mid-20th century.

Cups. 1T1M2C-6 is represented only by a handle sherd with transverse lines of blue (5PB 3/10).

1T1F2-22 (Fig. 13a): there is a narrow interior rim band in red-purple (10RP 4/8); the flowers are also red-purple, the stem is black and the leaves are green (2.5BG 3/6).

Another cup, 1T3B1B, is unusual in that the fabric is a homogeneous

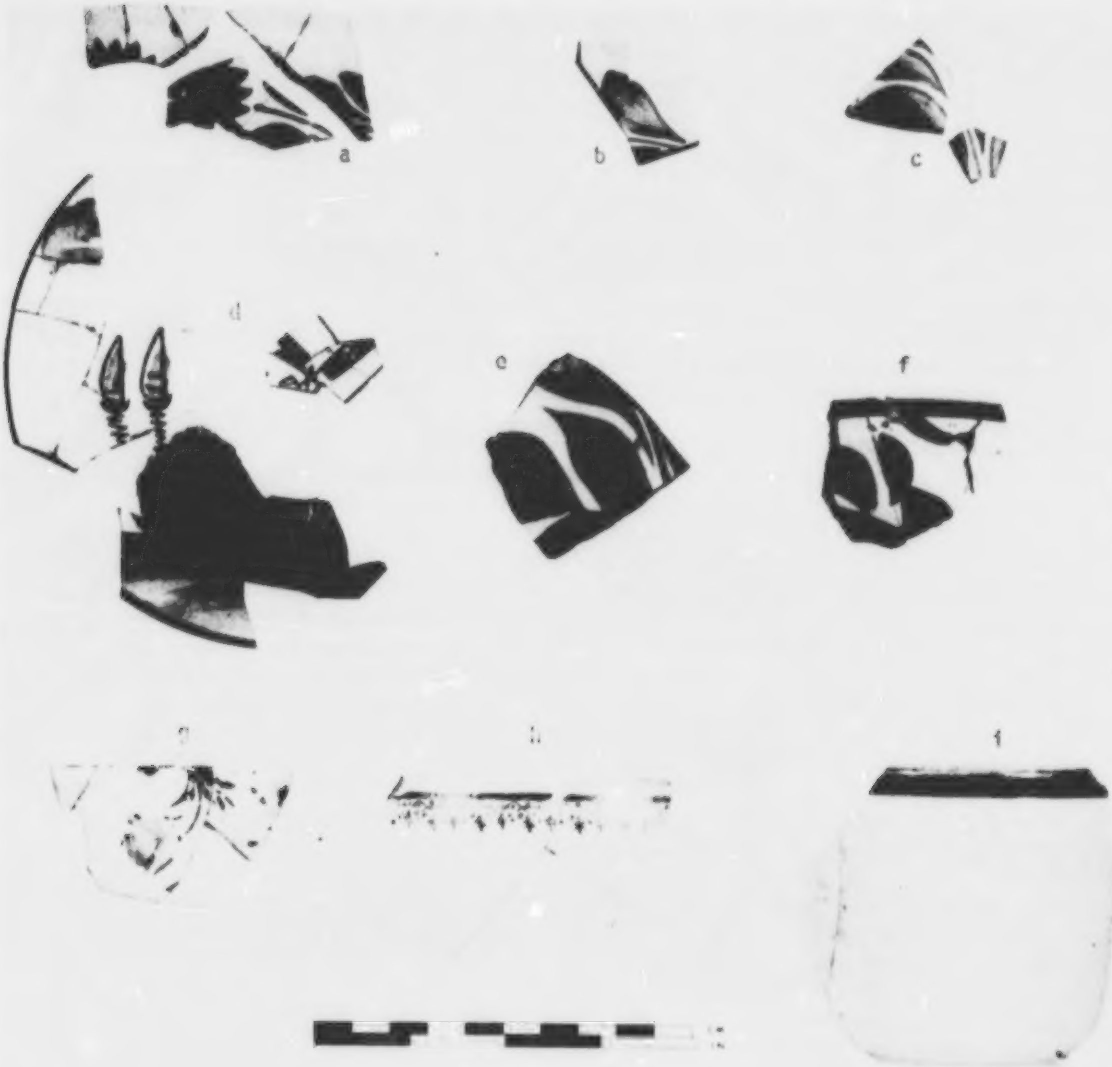

Fig. 13. Under-glaze painted, on-glaze painted, and gilded white earthenware. Under-glaze painted cup: a, 1T1F2-22. Under-glaze painted saucers: b, 1T2K2B-52; d, 1T1K2A-25. Under-glaze painted bowl: c, 1T2H2-29. Under-glaze painted large bowls or basins: e, 1T2M4-1636; f, 1T1M6-1939. On-glaze painted cup: g, 1T1M6-1940. Gilded cups: h, 1T1E4A-4; i, 1T2G6-4.

pale neutral grey. It is painted in deep blue (7.5PB 5/10) with interior and exterior rim bands and some sort of bold stylized floral shape on the exterior.

Saucers. 1T1K2A-25 (Fig. 13d): the colour is bright blue (5PB 3/8) and the maker's mark on the underside is JAPAN, hence a post-1890 date of manufacture.

1T2K2B-52 (Fig. 13b): the stem is black and the leaves are green (10GY 7/6).

Bowl. 1T2H2-29 (Fig. 13c): there is a narrow black rim band on the interior; the flowers and stems are violet (7.5PB 7/8) and the leaves are green (10GY 7/8).

Large bowls. 1T1M6-1939 (Fig. 13f): the colour is deep blue (7.5PB 2/6); the decoration covers only the inner (concave) surface.

1T2M4-1636 (Fig. 13e): the colour is deep blue (7.5PB 3/10) and covers both surfaces.

On-glaze hand-painted decoration

Two objects have on-glaze hand-painted decoration.

Cups. 1T2H2-30: the enamel has largely flaked off, but splotches of orange (10R 5/8), green (10GY 5/6), and blue (2.5PB 5/4) remain; the design is probably floral, similar to 1T1M6-1940.

1T1M6-1940 (Fig. 13g): little enamel remains, but there is evidently a black rim band, small daisy-like flowers in blue (2.5PB 5/6) with yellow (5Y 8/10) centres and small green (7.5GY 5/6) leaves; there are also a few pinkish tulip-like flowers atop black stems and some traces of orange (10R 5/8).

Gilded decoration

Gilding is gold or, by extension, some other metal baked onto the glaze surface. In Europe the technique dates from the mid-18th century when it was used primarily on porcelain. It remained an expensive and prestigious decorative element until technological advances made it practical for use on moderately priced dinnerware in the mid-19th century.

Gilding can serve as an adjunct to transfer printing, as on bowl 1T2H2-22 (Fig. 8g), or can complement other kinds of decoration, as on the rim-banded small plate 1T2M2-31. It can be a rim band itself, as on cup 1T2G6-4 (Fig. 11i) and plate 1T1X1-109, or can be transfer printed, as on cup 1T1E4A-4 (Fig. 11h). The Warburton patent of 1815 was the first commercially viable technique of gold transfer printing.

Undecorated

Thirteen objects do not seem to have been decorated. These include: ten cups, all straight-walled with diameters of about 9 cm, 1T2A2-45, 1T3C1-18, 1T2E2-1026, 1T2G4A-42, 1T2H1-5, 1T1K2A-43, 1T1K2A-46, 1T2K2A-61, 1T1X1-129, and 1T1X1-133; two saucers with diameters about 16 cm, 1T3C1-14 and 1T1X1-132; and a large bowl with a diameter of about 30 cm, 1T1F6-1247.

No decoration extant

A number of sherds bear no decoration but seem to represent discrete objects rather than merely parts of objects catalogued elsewhere; however, they are much the same as the other white earthenware forms and do not merit individual description. They include about nine cups, average diameter 9 cm; about 17 saucers; two small plates, average diameter 15.5 cm; some eight plates, average diameter 23 cm; about ten small bowls, average diameter 16 cm; one platter; and four large serving bowls or basins, diameters very approximately 35 cm. Three of the large bowls have shallow grooves about the inner edge of the brim. The proveniences of these objects represent typical Nootkan reoccupation contexts of the late 19th and early 20th centuries.

Several of the sherds bear parts of makers' marks.

1T2G4A-40 is printed in deep grey-green

...[CH]INA ...

1T2J1-42 is printed in green (2.5BG 3/4)

SEM[I VITREOUS PORC]ELAIN

around a circle surmounted by KTK in script and inside which is an eagle displayed; beneath it should be K.T. & K. CO. The company is Knowles, Taylor, & Knowles of Liverpool, Ohio, and the mark is post-1870 (Thorn 1947: 133).

1T1K2A-27 is stamped in blue-green (5BG 4/4): in a small circle 1.7 cm diameter is

NATIONAL CHIN[A]

and on another sherd is ...EM. In the centre of the circle is an eagle in side view atop a striped shield; the object is thus presumably of American manufacture although it was not unknown for British potteries to use American symbols.

1T2K1-35 is printed in green (5GY 5/6)

"...BU..." over "...IAN..."

1T1X1-135 is printed in black: a lion rampant, presumably the left supporter on the British coat of arms, surmounted by ROY[AL]... Beneath the lion is

CLEMENT...
ENG[LAND]

This may be the mark of the firm of Clementson Brothers of Hanley, Staffordshire, thus dating the object from 1891 (because the country of origin is given on the object) to 1916 (Godden 1964: 149).

1T1X2-105 is stamped in dark blue-violet (5PB 3/2): a crown surmounted by ...[I]MPERI[AL]...

Soft White Earthenware

Only one example of soft white earthenware was found, 1T1M1-21 (Fig. 14a). The fabric is soft, dense, and coloured off-white (10YR 8/2); the glaze is a translucent green (2.5GY 4/4) and has undergone fine crystalline crazing. The object is glazed on only one surface and its unusual contours indicate that it was moulded rather than thrown. Perhaps it was a spitoon.

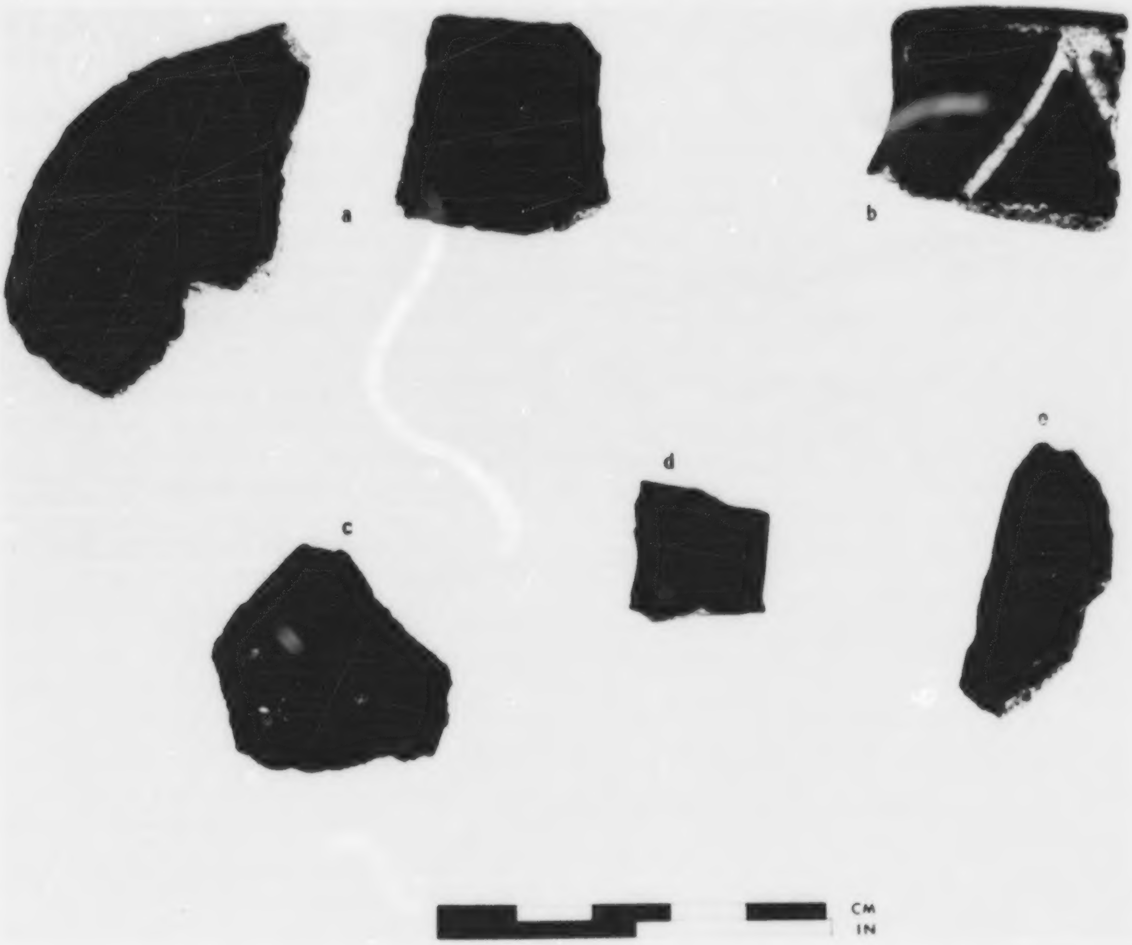

Fig. 14. Coarse and soft earthenware. Green-glazed soft white earthenware: a, 1T1M1-21. Transparent lead-glazed brown earthenware: b, 1T2B2B-3; d, 1T2F7A-1811X; e, 1T2M1-59. Black-glazed grey earthenware: c, 1T2G4A-46.

Pink Earthenware

1T2L1-32 is a small flat sherd of pink (5R 9/4) fabric.

Coarse Earthenware

Made from natural clays, coarse earthenware is basic pottery. The examples from Yuquot have not been identified, for such wares could have been made and taken to Yuquot from almost anywhere in Europe or North America from the late 18th to the early 20th centuries. Of course, most pottery used in Canada and British Columbia at this time came from

Britain, but eastern Canadian potters managed to win a share of the domestic market in the second half of the 19th century.

Most of the sherds are brown earthenware, or brownware, coloured bright, pale, or brownish orange (2.5YR 5/6, 7.5YR 8/6, or 5YR 6/6). Most have inclusions of fine grog (finely ground pottery) or sand. Four sherds, 1T2G3-7, 1T2G4A-45, 1T1X1-141, and 1T1X2-107, are heavily worn but retain traces of black glaze or slip. The black colour may be the result of chemical change, a condition sometimes seen with some lead glazes long immersed in sea water. Three other sherds are covered with transparent yellow-tinged lead glazes: 1T2F7A-1811X (Fig. 14d) and 1T2M1-59 (Fig. 14e) cannot be further identified, but 1T2B2B-3 (Fig. 14b) is evidently a bowl with under-glaze yellow slip line decoration on the brim; diameter about 16 cm. 1T2G4A-46 (Fig. 14c) is covered on both surfaces with a glossy black glaze and is probably from some sort of vessel; the fabric is hard and grey, shading to grey-brown beneath the surfaces. 1T2G2-10 is represented by five large, slightly curved, thick sherds, the concave surface covered with a thin maroon (10R 5/4) glaze. It could have been some sort of drainage tile.

Banded Ware

Banded ware, as a type of pottery rather than just a decorative technique, typically had a yellow earthenware body. Also known as "yellow ironstone" or "cane," refined yellow earthenware began appearing in Canada shortly after 1840 (Collard 1967: 141), though Collard advises that it should not be confused with Wedgwood's 18th-century cane ware, an unglazed buff stoneware. Brose (1966: 95) refers to the unbanded varieties of this yellow earthenware as "common yellow" and notes that it began to appear in Michigan in the 1830s. It was originally imported from Britain, and yellow ware competed directly and successfully with coarse brown earthenware, much of which was made locally in Canada. By 1860 two Canadian potteries were also making yellow ware, the Cap Rouge pottery in Quebec and the Brantford pottery in Ontario. Other Canadian potters followed, but British imports continued to dominate the market. The ware did not pass out of common usage in Canada until the 1920s and 1930s (Webster 1971a: 182).

Yellow ware was generally used for kitchen crockery, though domestic versions of the so-called "Rockingham" pottery usually consisted of a moulded yellow-ware body covered with a brown glaze. No Rockingham was recovered from Yuquot, but about 11 examples of yellow-ware kitchen and table crockery were. The examples have buff fabric (about 2.5Y 8/4); under the thin transparent lead glaze the surface colour is slightly darker. The glazes all contain impurities and, except 1T1F6-1250, have all undergone fine to minute crystalline crazing.

Such ware was typically banded and "banded ware" accounts for six of the examples, including possibly 1T2C1-2 and 1T1G3-15, both of which are small sherds having one face coated with under-glaze white slip.

1T1F6-1250 (Fig. 15b, 16a) is a bowl banded with white slip; diameter 13.2 cm.

1T1L2A-9 is a sherd with part of a broad white slip band and a narrow band in dark brown (5YR 2/1).

1T1X2-25 is a sherd with two narrow parallel dark brown (5YR 2/1) bands.

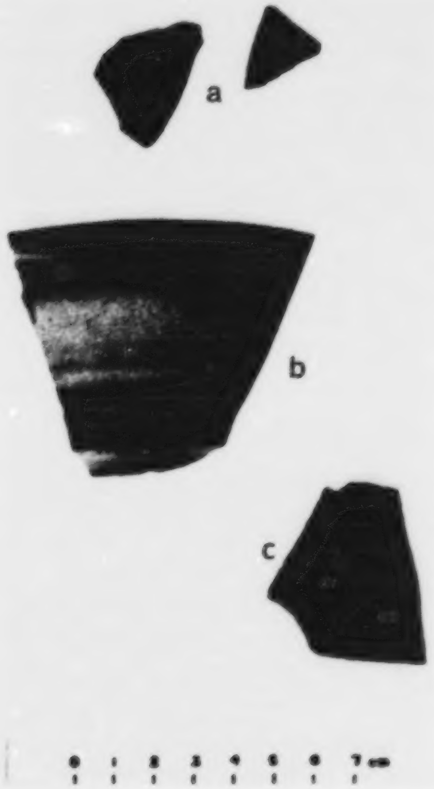

Fig. 15. Pearlware and banded ware. Pearlware: a, 1T2M2-3. Banded ware: b, 1T1F6-1250; c, 1T3C1-12.

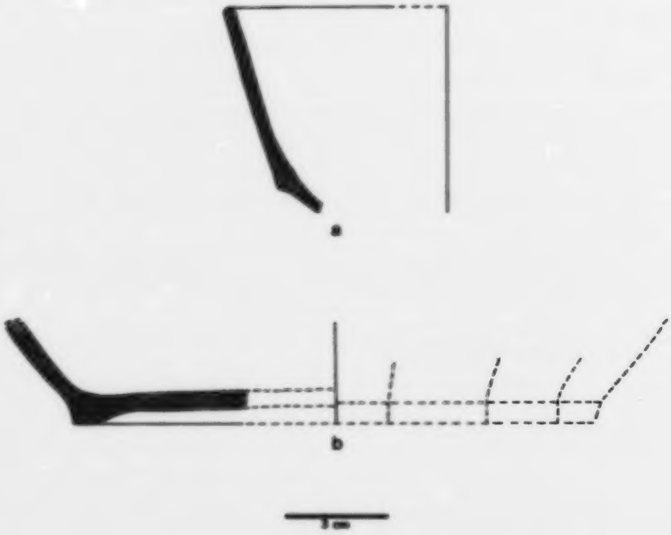

Fig. 16. Banded ware bowls. a, 1T1F6-1250; b, 1T2M2-4.

1T3C1-12 (Fig. 15c) is a specific variety of banded ware known as "Mocha ware." The object is probably a small jug, diameter about 17 cm; the dendritic decoration lies on a broad white slip band and is coloured blue (5PB 4/6) as is the dark band bounding the slip band. The Mocha or "tobacco spit" technique originated in the late 18th century and such ware was still available in Canada in the early 20th century. The original dendritic decoration was brown, but black, blue, green, and pink versions were developed. While most Mocha ware was imported from England and Scotland, the Cap Rouge and Brantford potteries produced some after 1870 (Webster 1971a: 181).

As for the rest of the Yuquot yellow ware, bowl 1T2A1-495 is represented by only a rimsherd from which it is inferred that the bowl was an ovate brimmed vessel, brim width 2.6 cm. 1T1H3-25 is a large straight-walled jar coated inside and out with a thin opaque grey (5Y 8/1) slip over which is a thin transparent glaze; diameter about 17 cm, wall thickness 0.55 cm. 1T1J2-22 is a large curved sherd, the concave surface covered with a thin under-glaze white slip. 1T2L3A-5 is a bowl rimsherd with a narrow blue-violet (5PB 5/6) rim band, brim width 1.95 cm. 1T2M2-4 (Fig. 16b) is a serving bowl, no decoration extant, with the exterior moulded into 16 facets; diameter 17.3 cm.

Stoneware

Stoneware is a dense and essentially non-porous ceramic, usually fired at 1100-1250°C. It represents the more vitrified end of the earthenware spectrum and fine stoneware sometimes approaches porcelain in its properties. Reflecting their greater density, stonewares are often noticeably heavier than other earthenwares and ring with a clearer note when struck. Their fractures tend to be smooth, sharp, and often conchoidal, and shed dirt easily; the tongue-tip porosity test detects virtually no clinging on a fresh break.

Salt-glazing was discovered in Germany in the late Middle Ages and introduced into England in the 16th or early 17th century. Because of the heat required, the technique is not suitable for lower-firing earthenware for it consists of introducing common salt, sodium chloride, into the kiln as it reaches its maximum temperature during firing. The salt volatizes and the sodium combines with silica and alumina in the surface clay to produce a thin, hard, glassy glaze that is part of the body rather than a coating. The amount of salt used and other skilled techniques affect the resultant texture of the glaze which, especially in the 18th century, was characterized by an "orange peel" texture (Griffiths personal communication).

White Salt-Glazed Stoneware

In the early 18th century, Staffordshire potters began to produce refined white salt-glazed stoneware for kitchen and table ware. By the 1740s their products were good enough to compete with tin-glazed earthenware for the popular market. After 1750 white salt-glazed stoneware was dominant in English markets until it in turn was superceded by creamware in the 1760s and 1770s. Staffordshire potters manufactured the bulk of the ware, though potteries throughout England (Towner 1971: 268) and even France made it as well.

The one example of white salt-glazed stoneware from Yuquot, 1T1B3-572, is apparently a tankard in the "scratch-blue" decorative style. Scratch-blue decoration consists of simple incised designs accented in cobalt blue; versions date from as early as 1724 (Mankowitz and Haggar 1957: 199). It was one of the earliest and most popular decorations for white salt-glazed stoneware though it was used primarily on vessels rather than on dinner services. The popularity of scratch-blue parallels that of white stoneware, the peak lasting from about 1748 to 1776 (Honey 1964: 81), though a "debased" version was in production as late as 1790 and possibly as late as 1820 (Noël Hume 1966: 520-22).

1T1B3-572 (Fig. 17a, 18a) seems to be typical mid-18th-century scratch-blue, very similar to a tankard illustrated in Mountford (1971: Pl. 168, extreme left). The colour in the incisions is deep cobalt blue (5PB 3/6). To judge from its provenience, the tankard was probably broken and discarded in the late 18th century. The vessel's diameter is about 7 cm and its height is over 7.15 cm.

Coarse Western Stoneware

Coarse western stoneware was used primarily for domestic storage vessels such as pickle crocks and for commercial containers such as beer bottles. These grey and buff stonewares evolved through German grey and English brown stoneware traditions dating back to the late Middle Ages and were taken to the USA in the 18th century and to Canada in the mid-19th century. The examples from Yuquot seem to be of the common straight-walled, mass-produced style typical of Canada, Britain, and the USA, made from about 1850 to 1900, but at least as late as the 1940s.

In the 18th century and much of the 19th century such pottery was commonly salt-glazed, at one time the hardest and most chemically inert pottery finish available in Europe; however, about 1835 William Powell of Bristol, England, developed a leadless feldspathic stoneware glaze (Hughes 1961: 43). This glaze and its later rivals had three main advantages over salt glaze. First, many customers preferred the smooth, glossy-firing feldspathic glaze to the characteristic "orange peel" salt glaze. After 1840, however, many potters learned how to avoid the latter texture (Hughes 1961: 29). Second, applied in the green state as a liquid, the feldspathic glaze could coat any or all parts of a vessel whereas gaseous sodium in the kiln would not always reach the interiors of vessels, particularly those with narrow necks. Many potters, therefore, including all Canadian salt-glazers, would first coat vessel interiors with a siliceous brown slip (Webster 1971a: 126). Third, the feldspathic glazes were more resistant to acidic and spiritous liquids than salt glazes. The first use of a feldspathic glaze on Canadian-made stoneware was in the 1860s, the formula brought by an immigrant Bristol potter. Stoneware production itself, however, had not begun in Canada until 1840 (Lambert 1970: 5). Stoneware was one of the few areas of the

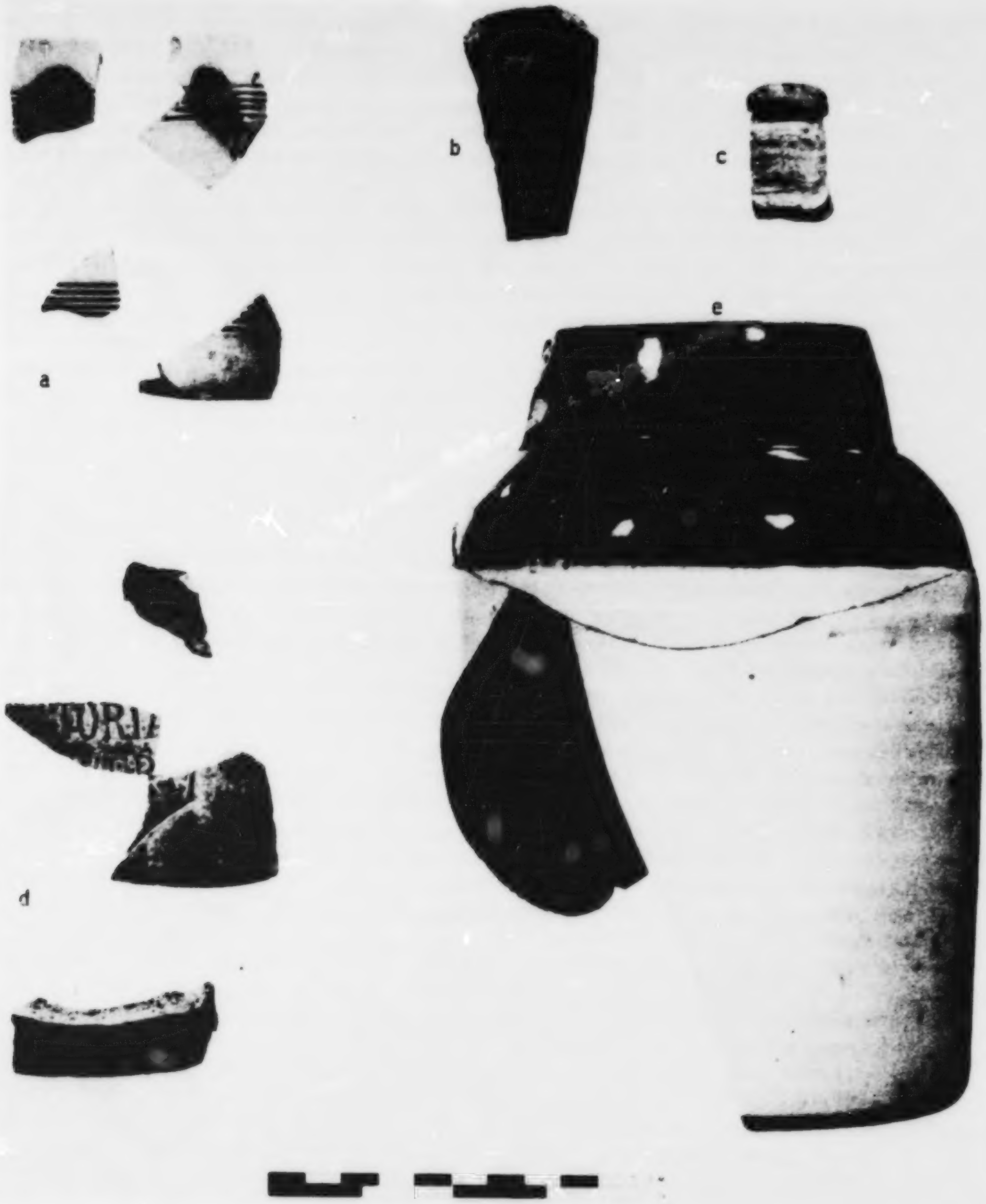

Fig. 17. Western stoneware. a, White salt-glazed tankard, 1T1B3-572; b, coarse salt-glazed jar, 1T1X1-136; c, coarse salt-glazed bottle, 1T1A1-27; d, coarse feldspathic-glazed Victoria Brewery bottle, 1T1A2-167; e, coarse feldspathic-glazed jar, 1T2G3-1379X.

ceramic industry where domestic potters managed to compete with British imports, and to maintain their markets Canadian potters soon adopted the superior Bristol glazes. By 1910 salt-glazing was effectively dead in Canada (Webster 1971b: 23).

The stoneware industry as a whole did not fare much better, though the properties of stoneware had filled a number of needs in the 19th century. Stoneware's good insulative qualities helped keep contents cool and its strength and resistance to corrosive liquids such as brine and liquor suited it for durable utilitarian storage vessels. In the latter half of the 19th century these advantages were progressively obviated by developments in other industries, namely improved canning technology, cheap mass-produced moulded-glass containers, and the widespread introduction of ice-boxes and ice-cooled meat transport (Webster 1971b: 23); and as Canada urbanized and became more service and consumption oriented, the demand for reusable bulk containers declined.

North American potters attempted to streamline their techniques and standardize their products. The variety of form and decoration of the early and mid-19th century disappeared and simple shapes with straight vertical or slightly downward-tapering sides became the rule, the larger ones being thrown and the smaller ones often being moulded (Webster 1971b: 22). Decoration became restricted to at most a merchant or maker's stamp and a brown slip on the upper part of a vessel. This colouring may once have been related to the interior slip of salt-glazed ware, but feldspathic-glazed ware also was often similarly coloured, beginning with Powell's original double slip-coated "Bristol Ware" (Hughes 1961: 43).

While some stoneware production persisted in Canada, by the early 20th century it had specialized chiefly in large storage vessels such as crocks and liquor jugs, probably finding its buyers in rural areas where the population would still seasonally process and store much of its own food and liquor. Some ginger beer was bottled in stoneware in Canada as late as the 1950s, one brand of Scottish marmalade abandoned its stoneware pot only in 1972, and a few brands of imported spirits were available in stoneware flasks even after that. Coarse stoneware pottery is now admired as a frontier-flavoured relic of the Canadian past and some of the homely old forms are being reproduced in France and England to take advantage of the market.

Salt-glazed

Sherds of an estimated eight salt-glazed vessels were recovered from Yuquot. 1T1A1-27 (Fig. 17c), represented by a neck sherd, 1T2C1-442, 1T2G5-6, 1T1M1-64, represented by two sherds each, and 1T1X1-140, represented by one sherd, are probably bottles; the diameter of 1T1M1-64 was about 9 cm. 1T1F3-1213, 1T1X1-106, and 1T1X1-136 (Fig. 17b) are body sherds of large jars or jugs, with diameters of about 25, 17 and 31 cm, respectively. The fabrics are grey to grey-buff, sometimes with colour graduations within a single body, and the salt-glazed surfaces are grey to grey-brown, the texture ranging from matt to pebbly (1T1X1-136, Fig. 17b). The interiors of 1T2C1-442, 1T1M1-64, 1T1X1-106, and 1T1X1-136 are coated with thin medium brown, glossy dark brown, smooth black, and rough red-brown slips, respectively, and the lower inner surface of neck 1T1A1-27 bears a thin pale brown shadow.

Feldspathic-glazed

Five feldspathic-glazed vessels are represented. The bodies of the five vessels range in colour from off-white to pale buff and tend to be finer in texture than the salt-glazed bodies. 1T2G4A-44 seems to be a body sherd of a bottle, diameter about 7.5 cm, and 1T1M1-62 is a body sherd of a jug or jar, diameter about 23 cm. 1T1A2-167 (Fig. 17d) is a Victoria Brewery beer bottle, reconstructed (Fig. 18d) from a photograph in Watson and Skrill (1971: Plate 3a) where it is dated about 1890. The upper exterior is coated with a thin amber (10YR 7/6) slip. The interior is clear-glazed, but the exterior is evidently unglazed. 1T2A2-49, shown in cross section (Fig. 18b), resembles the probable neck and mouth of 1T1A2-167, but is only clear-glazed. 1T2G3-1379X (Fig. 17e, 18c) is a large, double-glazed jar, height 18.75 cm. The dark glaze is coloured deep brown (5YR 3/4) and covers the jar's interior as well as the exterior of the neck. The lower exterior is covered with an opaque off-white (10YR 8/1) glaze, though the bottom of the foot ring is unglazed.

Refined Buff Stoneware

One small waterworn sherd, 1T1M1-52, is of a fine, dense light buff (2.5Y 8/4) stoneware. It is slightly curved with the convex surface covered with a dark green (10GY 3/2) opaque glaze. As the sherd is 0.64 cm thick, it probably came from a large vessel. This is not a common ware although there is nothing extraordinary about it.

Oriental Stoneware

The first record of Chinese on the Northwest Coast dates to 1788, but the 29 workers aboard the *Argonaut* stayed only briefly at Yuquot (Folan personal communication). The Oriental pottery found at Yuquot most likely arrived in the late 19th or early 20th century, brought either by Nootkan sealers or fishermen, or by Chinese working in local fish-processing plants. In 1895 a fish saltry was opened on Nootka Sound (Brathwaite personal communication). Chinese had only begun to arrive in appreciable numbers in British Columbia in 1858 during the gold rush; by 1884 some 15,700 were resident in the province (Chace and Evans 1968).

The Oriental stoneware from Yuquot has been examined and identified by Paul Chace. He has recovered similar material from campsites of Chinese railroad labourers in the American Southwest. Such pottery apparently originated in the late 19th and early 20th centuries in potteries in the Canton area. For illustrations of similar material see also Ferraro and Ferraro (1964: 72) and Kendrick (1966: 52).

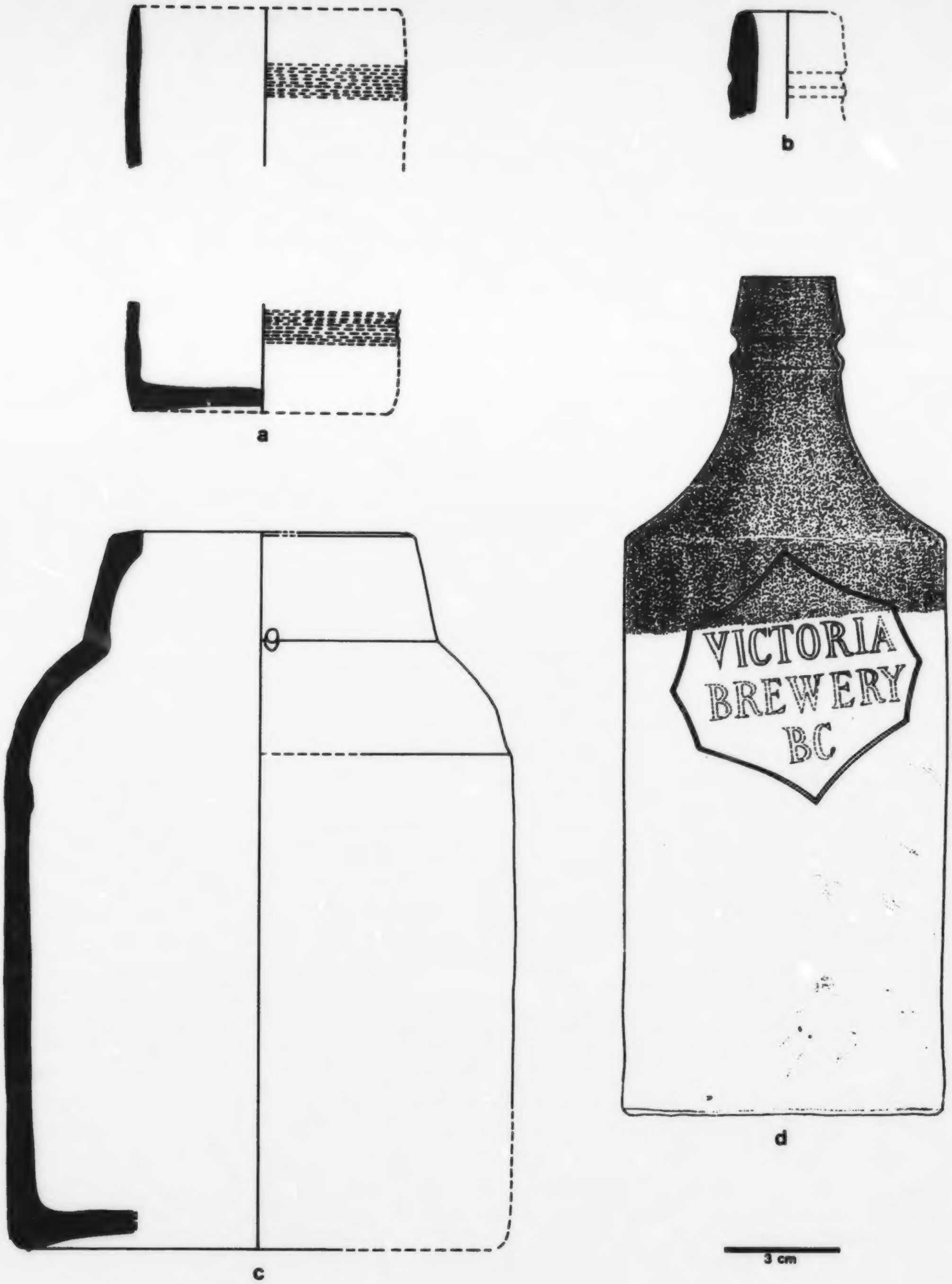

Fig. 18. Western stoneware. a, White salt-glazed tankard, 1T1B3-572; b, coarse feldspathic-glazed bottle, 1T2A2-49; c, coarse feldspathic-glazed jar, 1T2G3-1379X; d, reconstruction of a coarse feldspathic-glazed Victoria Brewery bottle, 1T1A2-167.

NG KA PY bottles

The brown-glazed vessels have been termed Shekwan Brownware by Mr. Chace, after a town near Fatshan where such pottery was manufactured. They were usually liquor bottles and the four examples from Yuquot resemble the "NG KA PY (pronounced ink-a-pay)" whisky bottles in Ferraro and Ferraro (1966: 73, fig. 181, 182). Similar versions are still made. Unfortunately none of the vessels recovered from Yuquot is complete enough for reconstruction, but they can be dated by two features. 1T1K2A-48 (Fig. 20b) has a joining ridge on the interior, indicating union of a separately thrown top and bottom and a post-circa-1870 date of manufacture. Such vessels from earlier-dated sites were thrown in single units (Chace personal communication) and were also flat-based. Post-1870 bottles have foot rings (Fig. 20a, c). Whether these differences represent changes in technique or merely in suppliers is at present unknown.

Sherds of some four bottles were recovered from Yuquot: 1T1B1-32 (Fig. 20c), 1T1K2A-47, 1T1K2A-48 (Fig. 20b), and 1T1M1-63 (Fig. 19a, b, 20a). All are of coarse, brittle, grey fabric and are coated with a thin brown (5YR 4/2 to 5/6) slip with a matt or glossy brown or black glaze only on the exterior above the foot ring. The most aesthetically striking of the four is 1T1M1-63 (Fig. 19a, b) on which the black glaze and brown slip have run together to give an interplay of black, brown and subtle green with a metallic lustre. Such variegated colouring is typical of NG KA PY bottles (Ferraro and Ferraro 1966: 73). 1T1K2A-48 and 1T1M1-63 have diameters of about 15 cm; the rest are unmeasurable. 1T1M1-63 is over 8.7 cm high. The walls of all four are about 0.35 cm thick.

Ginger jars

An estimated five examples of the squat grey vessels were recovered from Yuquot. Referred to as ginger jars for convenience, they could have contained other kinds of spiced or salted foodstuffs. Those from Yuquot are globular, diameters about 14 cm. The bodies are either of thick coarse buff (Fig. 20d) or thin fine grey fabric (Fig. 20e); the former bodies are covered with thin translucent white glaze and the latter with transparent colourless glaze. The glazes are glossy with a pebbly texture and, with the exception of 1T2B1A-12, have undergone fine to medium crystalline crazing. The bases and upper parts seem to have been wiped clean of glaze before firing, possibly to prevent the fusion of stacked vessels during firing, but possibly also to enable a sealant to adhere to the vessels. Faint smooth undulations are noted on the interiors, indicative of the throwing process.

The jars are 1T2B1A-12 (Fig. 20e), 1T1K2A-49, 1T1X1-134, 1T1X2-106 (Fig. 19c, d, e, 20d), and 1T2X1-1. Three of them exhibited narrow coloured bands painted around the body: 1T2B1A-12 has a medium grey (10BG 6/1) band, 1T1K2A-49 has at least two grey-green (2.5BG 5/2) bands, and 1T1X2-106 has a pale blue (2.5PB 7/4) band.

Other

Sherds of another three objects have an Oriental quality. 1T1C4-205, shown in cross section (Fig. 20f), seems to be a base sherd

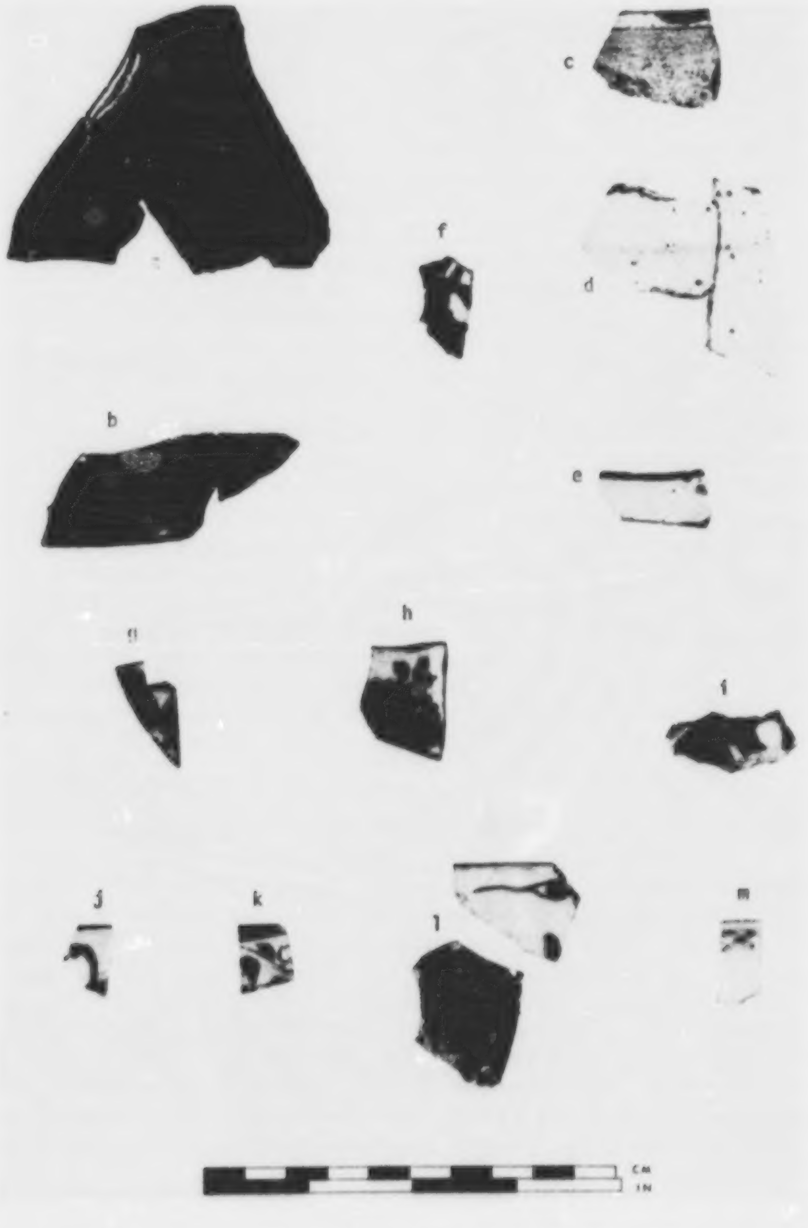

Fig. 19. Oriental stoneware and porcelain. Stoneware: a, b, NG KA PY bottle, 1T1M1-63; c, d, e, ginger jar, 1T1X2-106; f, miscellaneous, 1T3S1-166. Transfer-printed porcelain: h, 1T1K2A-36. Under-glaze hand-painted porcelain: g, 1T2E2-1045; i, 1T2H2A-35; m, 1T1W1-4. On-glaze hand-painted porcelain: j, 1T1L2A-10; k, 1T1L2A-12; l, 1T10R40-1.

of a large bowl; foot ring diameter about 12 cm. The fabric is dense, is coloured pale grey, and has sharp fractures; minute holes and fissures in the fabric follow the curve of the foot ring, indicating the centrifugal pressures of throwing. It is glazed with a faintly green translucent glaze that is very shiny with a slightly pebbly texture. The reason for a rough, irregularly glazed area spanning the floor is unknown.

1T2C1-460 is a curved body sherd of grey-brown fabric covered with a streaky semi-gloss thin brown glaze. It seems to be from a vessel at least 10 cm in diameter.

1T3S1-166 (Fig. 19f) consists of flat body sherds of coarse, pale buff fabric coated with a translucent white glaze similar to that on some ginger jars. One face has some mottled brown and dull green painted under-glaze decoration.

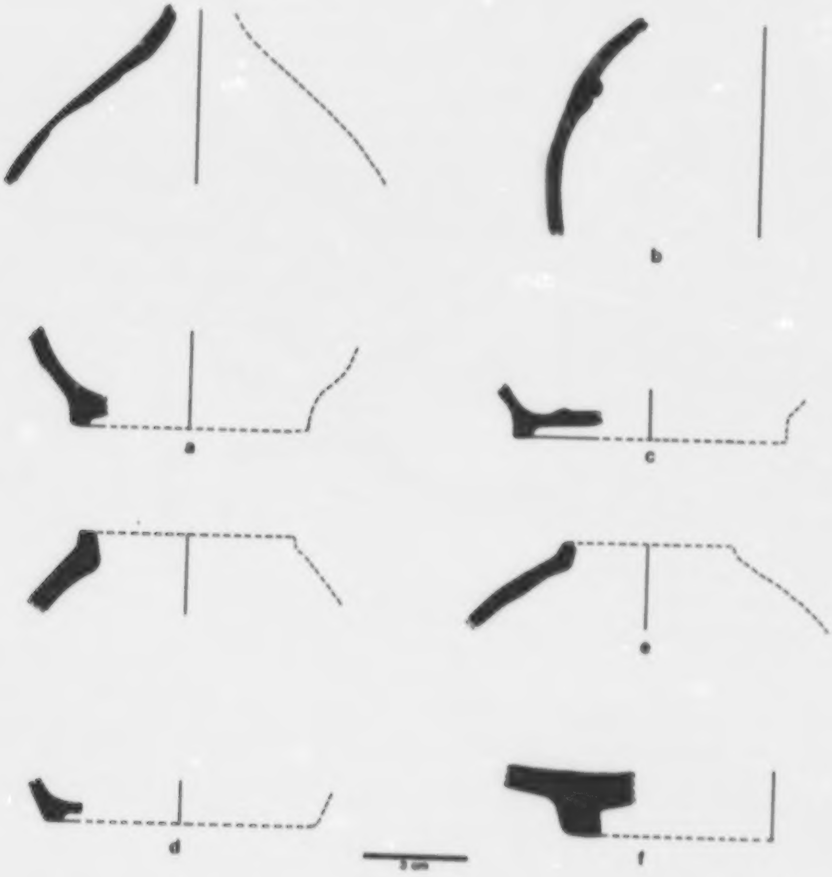

Fig. 20. Oriental stoneware. NG KA PY bottles: a, 1T1M1-63; b, 1T1K2A-48; c, 1T1B1-32. Ginger jars: d, 1T1X2-106; e, 1T2B1A-12. Large bowl: f, 1T1C4-205.

Porcelain

True porcelain is a completely vitrified, translucent ceramic. Originating in China, it became a highly prized import in Europe where many potters and alchemists tried to imitate it; however, until the 18th century European craftsmen were able to produce only artificial or soft-paste porcelains that were various fusions of some silicate and refined clay and had neither the hardness nor brilliant whiteness of the real thing. About 1708 the formula of true porcelain was discovered in Saxony and, despite efforts to guard the secret, by the early 19th century few European porcelain factories produced anything else.

One variety of soft-paste porcelain has persisted. Some 18th-century experiments had successfully employed bone ash in artificial porcelain formulas and by 1805 Josiah Spode of Staffordshire had perfected a very white, highly translucent bone china. Though bone china has been manufactured commercially in Sweden and the USA as well, it has been the characteristic porcelain of England since the early 19th century.

A simple chemical test for phosphates identified only three of an estimated 59 European porcelain objects from Yuquot as bone china. Britain has produced little true porcelain since the early 19th century so this preponderance would suggest that most of the porcelain originated in other countries. France is the most probable source (Collard 1967: 189-97), with Austria, Germany, and the USA the next most likely candidates as all exported porcelain to Canada in the late 19th and early 20th centuries. Some of the porcelain is of Oriental manufacture, from China and Japan, and so the true porcelain has been divided into Western and Oriental groups. Oriental porcelain is generally distinguished by its characteristic "orange peel" glaze, similar to but much finer than salt-glaze texture.

Oriental Porcelain

Transfer-printed decoration

1T1K2A-36 (Fig. 19h) has an Oriental quality, though it may be Western; transfer printing is a 20th-century phenomenon in the East. The sherd is probably from a plate; it is edge-banded and printed under glaze in deep cobalt blue (7.5PB 2/6) with a blue shadow "flown" into the surrounding glaze.

Under-glaze hand-painted decoration

About eight under-glaze hand-painted objects were recovered. The first seven are painted in deep cobalt blue. Bowl 1T3C2-159 and unknown forms 1T2E2-1045 (Fig. 19g), 1T7040-1, 1T2R2-152, and 1T3S1-1 are too fragmentary for further identification.

1T1W1-4 (Fig. 19m); rimsherd, possibly from a small bowl; the familiar Chinese criss-crossing band illustrated is on the interior, the exterior retains only part of a scrolling vine; diameter about 9 cm.

1T2H2A-35 (Fig. 19i): floor/base sherd of a bowl; the glaze is slick with a greenish tinge; foot ring about 6 cm in diameter.

The eighth example of under-glaze hand-painted porcelain is unique in that the fabric is a pale grey: 1T1L2A-11 is a bowl with everted rim and has a narrow pale green (2.5GY 5/2) interior rim band, a blue-violet (2.5PB 5/4) exterior rim band, and a trace of blue-violet decoration extant farther down; diameter about 15 cm.

On-glaze hand-painted decoration

Seven objects: two cups or small bowls, two saucers, one bowl, a possible tea jar, and an unknown form were on-glaze hand-painted.

Cups or small bowls. 1T1E2-10 has traces of disintegrating polychrome floral decoration; about 11 cm in diameter.

1T1L2A-12 (Fig. 19k): the rim band and scene outline are rust red (7.5R 4/8); the tree is green (10G 4/4), the girl's hair is dark muddy grey and her robe is blue (2.5PB 5/6).

Saucers. 1T1K2A-38 is a saucer made in the style of European tableware; 14.5 cm in diameter, it has a narrow 2.5PB 5/8 blue rim band and the remains of a small green (7.5GY 6/6) frond-like leaf on the wall. The maker's mark is MADE IN JAPAN. Use of "Made in" indicates a 20th-century origin.

1T1L2A-10 (Fig. 19j): the rim band and curlicue are rust red (7.5R 4/10); the curlicue has a dark brown line along the concave edge; the grey area is painted a matt blue-grey (10B 8/2).

Bowl. 1T1U1-184X has only discoloured blotches of brown and rust pink on the interior; diameter about 18 cm.

Tea jar. 1T10R40-1 (Fig. 19l) is a cubical container inferred to be a tea jar; the line on the upper sherd in the illustration is rust red (10R 5/8) and the lower spot, possibly a leaf, is in discolouring green (2.5G 6/4); the lower sherd in the illustration bears a bumpy mottled yellow (10YR 8/6 to 6/8) glaze, and probably represents the finish on the interior and/or bottom of the vessel.

Unknown form. 1T10P40-1 has only a few coral pink (10R 6/8) wavy lines.

Undecorated

Sherds of at least one bowl, 1T11R40-1, having a strongly everted rim were recovered; diameter about 15 cm.

Western Porcelain

The western porcelain recovered from Yuquot is mostly tableware, but includes one or two ornaments, 1T3A1-55 and 1T1E2-9, a tiny doll, 1T2J2-4, and seven examples of toy tableware: 1T2E3-6, 1T2F1-13, 1T2K2B-58, 1T1M1-18, 1T1M1-19, 1T2M1-58, and 1T1X1-118.

Moulded decoration

Sherds of three cups, one saucer and two objects too fragmentary to identify, 1T2M1-55 and 1T1X2-101, were recovered. Two of the cups, 1T2H2-37 and 1T1X2-99, are represented only by handle sherds. 1T2M1-57 is a cup body sherd, rippled on the outside and possibly a mate for gilded and moulded saucer 1T1M1-20 (Fig. 21g). Saucer 1T2E3-8 is represented only by a rim sherd with rows of small raised dots near the rim. 1T2K2B-58 is a toy sugar bowl or tea pot with an impressed Greek Key pattern around the outside. 1T1X1-112 is a base sherd of another unidentified toy vessel with moulded grooves on the exterior.

Transfer-printed decoration

Small sherds of two objects printed under glaze in, typically, deep cobalt blue were 1T2M1-56 and 1T1X1-11; they are too small to identify. Three other objects are printed on glaze, the last two by a fine, lithograph-like transfer process.

Cup or mug. 1T2M1-54 (Fig. 21h) bears the edge of a scene with traces of yellow-green, below which is printed, apparently in black,

...H THROUGH THE WOO...
STA...

There are also traces of gilding.

Plate. 1T2E3-1223 (Fig. 21a) apparently shows an apple or other fruit; the colour is mainly 5Y 8/4 yellow with accents of pale green (7.5GY 7/4) and brown (5YR 5/4); the foot ring diameter is 12 cm.

Small plate. 1T1X1-113 (Fig. 21b) has a floral pattern, printed and painted; some five colours are extant: grey (2.5PB 5/2) painted; grey-mauve (7.5RP 6/2), green (5GY 5/4), yellow (2.5Y 8/4) and red (2.5R 6/8) printed.

Under-glaze hand-painted decoration

Sherds of six under-glaze hand-painted objects were recovered. 1T1K2A-42 is a saucer with a broad fuzzy band of rusty orange (10R 5/8) around the floor. 1T1X1-17 is a cup or small bowl with a broad rim band in blue (7.5PB 4/12); diameter 9 cm. Another two sherds, 1T1X1-116 and 1T1X1-118, are painted in deep cobalt blue, but are too small for further identification.

Ornaments. Two sherds inferred to be from ornaments were recovered. 1T3A1-55 was moulded and painted, but is too fragmentary to identify; a few ripples, some gilding and discolouring on-glaze enamel, and some olive green (7.5GY 4/8) under-glaze paint are all that remains of the decoration. 1T1E2-9 is an unglazed base sherd, diameter about 5 cm, of what may be an ornament. A speck of blue glaze is on the interior.

On-glaze hand-painted decoration

Eleven objects were on-glaze hand-painted. A saucer, 1T2E3-1203, and three unknown forms, 1T2G4A-36, 1T1L1C-47, and 1T2M2-32, are too fragmentary to describe. 1T1M1-19 is a rim sherd of a toy vessel rim banded in blue (2.5PB 4/10).

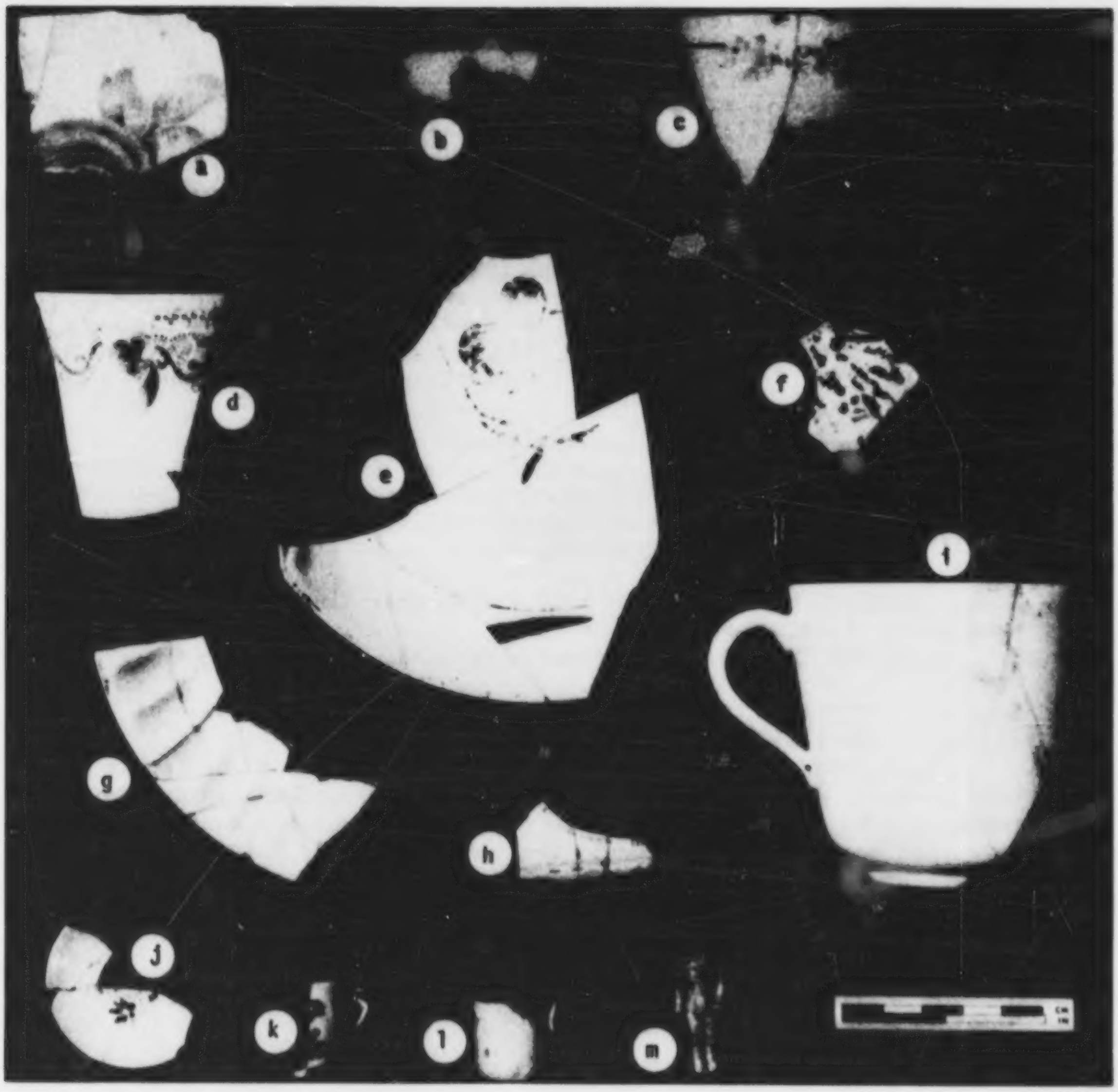

Fig. 21. Western porcelain and bone china. Porcelain: a, on-glaze printed plate, 1T2E2-1223; b, on-glaze printed small plate, 1T1X1-113; c, on-glaze hand-painted cup, 1T3A1-54; d, gilded transfer-printed cup, 1T1K2A-37; e, gilded saucer, 1T2G3-1380X; f, on-glaze hand-painted saucer, 1T2F2-2; g, moulded and gilded saucer, 1T1M1-20; h, on-glaze printed cup or mug, 1T2M1-54; j, toy saucer, 1T2M1-58; k, toy cup, 1T1M1-18; l, toy cup, 1T2F1-13; m, doll, 1T2J2-4. Bone china: i, cup, 1T1H3-24.

Cup. 1T3A1-54 (Fig. 21c) has a narrow brown (2.5YR 3/2) line along the rim; the lower band is maroon (2.5R 3/4), the flowers are pink (10RP 7/6), the leaves green (5GY 7/4) with gilded curlicues; the diameter is 9 cm.

Saucers. 1T2F2-2 (Fig. 21f) retains little of the enamel: blue (2.5PB 5/6), green (7.5GY 5/4), pale green (10GY 8/4), and traces of mauve, and gilding.

1T2H2-36 is rippled about the cup well and there are traces of pink (2.5R 7/4) on the glaze; diameter 15.5 cm.

Toys. 1T1M1-18 (Fig. 21k) is a cup; the flower is rust red (7.5R 4/10) and the meadow and tree are green (7.5GY 7/8); all are outlined in black and the line on the handle is blue (7.5B 4/6); the diameter is 2.6 cm. 1T2M1-58 (Fig. 21j) is a saucer; the flower is rust red (7.5R 4/10) with traces of green (7.5GY 7/8) and lines of brown-black; the diameter is 4.4 cm.

Gilded decoration

Two gilded cups, six saucers, and one unknown form were recovered although some of the otherwise decorated objects are also gilded. 1T2E3-7 is a narrow shaft fragment, perhaps a handle.

Cups. 1T1F2-32 has a thin rim band and another line further down on the body; diameter about 10 cm.

1T1K2A-37 (Fig. 21d) is transfer printed; diameter 10 cm.

Saucers. 1T2G4A-38, 1T1K2A-39, 1T1L1C-49, and 1T1X2-102 have diameters about 15 cm; all bear narrow gilded rim bands.

1T2G3-1380X (Fig. 21e) has the popular "cloverleaf" or "sprig and band" design; diameter 15.8 cm. This pattern was common in Canada in the late 19th and early 20th centuries and was probably manufactured by more than one European factory. One version made of "fine English china" (presumably bone china) was advertised in Eaton's catalogue from 1895 to 1920 and was available on white earthenware for some years later. As an example of its low cost, a 40-piece service of the china was listed at $2.80 in 1900 (Eaton's 1900-1: 233).

1T1M1-20 (Fig. 21g) is moulded and has a thin gilded rim band; diameter 14.5 cm.

Undecorated

Toy. 1T2J2-4 (Fig. 21m) is a small doll; original height about 3.5 cm. The arms were originally held on with a thin iron wire.

Unglazed

Cup. 1T2F1-13 (Fig. 21l); the handle is painted a 2.5R 6/10 pink, which was probably baked on during the bisque firing. The diameter is 2.2 cm.

No decoration extant

1T2G4A-37 is a sherd of a large bowl with everted rim, probably elliptical, with a diameter of at least 20 cm. Sherds of a further two cups, five saucers, one bowl, a toy sugar bowl (1T2E3-6), and four unknown forms were recovered also, but were too fragmentary to merit description.

Bone China

1T2A2-44 consists of two sherds of a handle moulded to give the impression that it had been twisted; traces of gilding were noted. 1T1L1A-48 is a bowl rimsherd with a gilded rim band on the inside; original diameter about 14 cm.

1T1H3-24 (Fig. 21i) is a cup with a gilded line around the outside 2.2 cm below the rim; diameter 7.8 cm.

Industrial Porcelain

1T1J1-30 (Fig. 22a) is a glazed doorknob, diameter about 6 cm.

1T2K1-34 (Fig. 22b) is an unglazed electrical insulator, original length over 7.75 cm, for insulating electrical cables passing through planks or beams. Such insulators are still commonly seen in houses built in the early to mid-20th century.

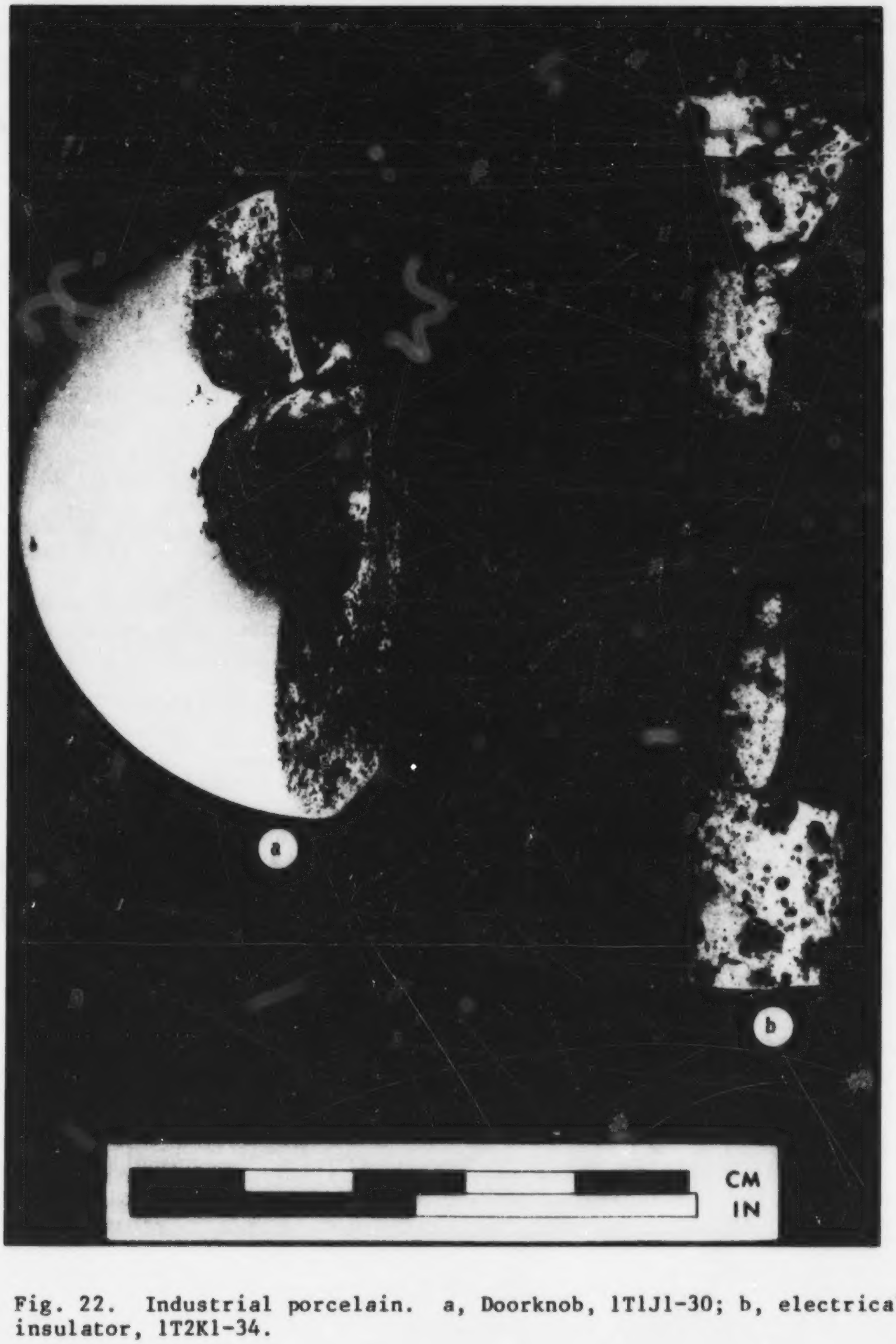

Fig. 22. Industrial porcelain. a, Doorknob, 1T1J1-30; b, electrical insulator, 1T2K1-34.

CONCLUSIONS

Although no one questions the historical truth that a Spanish garrison occupied Friendly Cove in the late 18th century and thereby briefly interrupted occupation of the site by Nootkan Indians, it is, nonetheless, gratifying to affirm this archaeologically. More important, however, is the recovery of a well-dated sample of late 18th century Mexican pottery and the indication of accculturative influences on the Nootkan Indians in the 19th and early 20th centuries.

The Spanish Occupation

The Spanish occupation ceramics were the only pottery recovered from the following lots: 1T1B4, 1T2B2 through 1T2B5, 1T3B2B, 1T3B3A, 1T2C5, 1T2C6, 1T3C4A through 1T3C7, 1T1D3, and 1T1D4. Several lots included Spanish pottery in uncertain context: 1T1A3, 1T3A3, 1T3B2A, 1T1C4, 1T1C5, 1T2C4, 1T3C3, and 1T3C4. Hispano-Mexican sherds were found in association with late 19th- and early 20th-century ceramics in the following lots: 1T1A1, 1T2A1, 1T2A2, 1T3A2, 1T2B1A, 1T3B1, 1T2C1, 1T2E3, 1T1F3B, 1T2F5, 1T1G2, 1T1G6, 1T2G1, 1T2G2, 1T2G4A, 1T1H3, 1T1J2, and 1T2M3.

A quantity of Hispano-Mexican pottery was also found on San Miguel Island where the thinness of the soil made stratigraphic differentiation virtually meaningless. The Spaniards maintained a gun battery on San Miguel Island and the presence of their pottery there indicates that meals were eaten and hence that the guns were probably manned at times for extended periods. In the latter years of the occupation, however, the Spaniards were generally on good terms with the Nootkans, foreign traders, and the British Royal Navy, and the gunners were likely posted to fire diplomatic salutes as well as to defend against possible hostilities. The Spanish occupied Yuquot in 1789 and from 1790 to 1795.

The Spanish ceramics consist of an estimated 26 **majolica** objects and 41 vessels of several kinds of coarse earthenware, all of it, with the possible exception of two olive jars, originating in Mexico. The **majolica** includes some 12 deep plates, three cups, three small bowls, and eight unknown forms. The coarse earthenware includes about 21 small bowls, probably soup bowls, at least seven *casuelas*, or wide shallow bowls, at least four *ollas*, large straight-walled jars, three *cantaros*, small-mouthed jars, one *jarro*, a small jar, two olive jars, and three small jars or jugs. Several of the coarse earthenware vessels have sooty coatings on the exterior, showing that they were used as cooking vessels. Weigand et al. (1973) conclude that the Spanish had at least a basic inventory of kitchen vessels with them and that the pottery had originated in several different parts of Mexico. The Spanish wanted for little in general at Yuquot, and the English delegation that arrived in 1792 remarked on the comfortable standard of living that the Spaniards enjoyed.

The Spaniards could have used some of the Oriental or English ceramics and this could account for the Oriental stoneware bowl 1T1C4-205 and the English scratch-blue tankard sherds in 1T1B3 and 1T2C4 and creamware sherds in 1T3A2, 1T1C4A, and 1T3C4. The restrictive Mexican customs laws of the time would, however, make it unlikely that the Spaniards obtained the goods in Mexico and brought them with them. We can only say that certain of the Oriental ceramics could have been brought during the 18th, 19th, or 20th centuries and the early English wares could have come off any of the numerous British, American, or other European ships that anchored near Yuquot in the late 18th and early 19th centuries.

The impact the Spanish made on the Nootkans seems to have been minimal, certainly in terms of the ceramics, in spite of the fact that some Nootkans were frequent visitors to the Spanish post and that a few families had even resumed residence at Friendly Cove before the Spaniards had left for ever. While it is entirely possible that some Nootkans acquired and used pottery from the Spaniards and from traders, the archaeological evidence suggests that widespread acceptance of pottery by the Nootkans did not come until the late 19th century.

The Nootkan Reoccupation

The Nootkan reoccupation component was defined to include all pottery not of Hispano-Mexican origin and assumed to have been deposited mainly by the Nootkans after the Spaniards left in 1795. In the main trench in the village the ceramics of the Nootkans reoccupation constitute a fairly distinct stratigraphic component: operations 1 through 3, suboperations A through D, lots 1 and 2, and operations 1 and 2, suboperations E through M, lots 1 through 6. A small quantity was also found on San Miguel Island although there no stratigraphic or horizontal differentiation was found to separate the Spanish and Nootkan components.

The component consisted mainly of late 19th- to early 20th-century refined white earthenware, most of which is believed to have been imported from the Staffordshire potteries in England, some of which is believed to have come from Scotland, and at least a few objects of which came from the USA and Germany. Unfortunately, few backstamps, or makers' marks, were recovered to definitely prove origins. The next largest category of ceramics was the hard-paste European porcelain and the rest of the ceramics were accounted for by a variety of wares typical of the late 19th and early 20th centuries, evidently the date of deposition of the vast majority of the material. As for forms, small bowls and cups were by far the most common ceramic objects recovered from the excavations. (For a summary of wares and forms see Appendix A.)

The entire Nootkan reoccupation component includes sherds of over 400 ceramic objects, though the main trench covered about 4% of the area of the present village midden (Dewhirst 1980). In only seven instances was more than one object from the same or an identical dinner service identified. Purchase from open stocks, gift, trade, mobility of residents, disturbance of the deposits and/or the limited area from which the sample was taken could all account for this.

Although few backstamps or merchants' marks were found to date the pottery, those that were recovered and identified were fairly consistent:

Britain		
1T1B1-17	1879-90	refined white earthenware, transfer printed, small plate
1T2G4A-43	1891-1904	refined white earthenware, transfer printed, saucer
1T2G6-1302	1891-1932	refined white earthenware, transfer printed, cup
1T2G6-1389	1861-86	refined white earthenware, transfer printed, bowl
1T2M1-51	1847-date	refined white earthenware, transfer printed, washbasin
1T1W1-2	1885-90	refined white earthenware, transfer printed, saucer
1T1X1-135	1891-1916	refined white earthenware, no decoration extant, form unknown
Canada		
1T1A2-167	ca. 1890	coarse western stoneware, feldspathic glazed, beer bottle
Germany		
1T1C1-3	1891-?	refined white earthenware, transfer printed, saucer
1T2H2-22	1891-?	refined white earthenware, transfer printed, bowl
Japan		
1T1K2A-25	1891-?	refined white earthenware, hand-painted, saucer
1T1K2A-38	1900-?	oriental porcelain, on-glaze hand-painted, saucer
USA		
1T2J1-42	1870-?	refined white earthenware, no decoration extant, form unknown

As implied by the above, the majority of the Yuquot ceramics originated in Britain. With an educated guess, one might divide the Nootkan reoccupation ceramics as follows: roughly 50% from the Staffordshire potteries, mainly consisting of the transfer-printed white earthenware, with perhaps 14% from Scotland, namely the stamped white earthenware, about 6% from China, as high as 13% from France, the main European hard-paste porcelain supplier for Canada in the 19th century, and small percentages from Germany, Japan, the USA, and perhaps Austria and eastern Canada in about that order. Western Canada was already dependent upon overseas trade in the late 19th century and such a collection is reasonable. In fact, most wares one might expect to find on any late 19th- or early 20th-century Euro-Canadian site were in evidence at Yuquot.

Articles bearing the name of the country of origin can, as a rule, be dated as post-1890, the year of the McKinley Tariff Act. This required a number of manufactured goods imported into the USA to be labelled with the country of origin. Canada did not institute similar legislation until the 1930s, but the U.S. regulations had already set the pattern and many European potteries dutifully labelled their wares, regardless of eventual destination. Use of "Made in..." did not begin until the 20th century.

General styles of ceramics are less precise than backstamps for dating but are still reliable (see Appendix A for a summary of the wares found).

The earliest identified non-Hispano-Mexican ware found was represented by a scratch-blue white stoneware tankard, presumably brought to Yuquot around the time of the Spaniards. The sherds were recovered from lots 1T2A2, 1T1B3, 1T2B2, 1T2B2A, and 1T2C4. Creamware sherds, also presumably from the time of the Spaniards or shortly thereafter, were found in lots 1T3A2, 1T1C4A, 1T3C4, 1T2E1, and 1T1F4. Two pearlware sherds were found in 1T2M2. With the possible exception of some of the brown earthenware and Oriental stoneware and porcelain, these were the only non-Hispano-Mexican ceramics attributable to the pre-1850 period. This paucity can be explained in three ways:

1. The sample included only a fraction of what the Nootkans actually acquired: the excavations were limited, the Nootkans were seasonally migrant and they tended to quickly trade or potlatch goods to neighbouring groups.

2. The fur trade declined quickly in the 1790s and after the Nootkans captured and plundered the *Boston* in 1803 few traders visited the village till the second half of the 19th century.

3. Pottery would have had little appeal. Wike (1951) points out that Northwest Coast Indians had very definite priorities in the fur trade, emphasizing the use of western goods to improve the efficiency and enjoyment of indigenous patterns. Metal tools and ornamental goods were most in demand: muskets, axes, knives, fish-hooks, glass beads, abalone shells, mirrors, and sheet copper. The size, weight, and fragility of pottery would discourage its use as a trade article for it would have to be shipped around Cape Horn in bulky crates, packed into the hinterlands, and finally used by Indians accustomed to the toughness of wooden vessels and the abundance of large sea shells. Aside from the prestige of an imported item, pottery would have little advantage over native forms at least until the labour specialization of a wage economy was introduced. According to the archaeological evidence, pottery did not replace the native forms at Yuquot until the last two decades of the 19th century, and then most of the pottery used was refined white earthenware. Because of its hardness and whiteness and general form, all of the refined white earthenware is probably post-1850.

The yellow ware, for example, the mocha-banded ware vessel 1T3C1-12, is characteristic of the mid- to late 19th century in Canada, although it was still available into the early 20th century. The stamped or "Portneuf" white earthenware is of 1840 to 1920 vintage, but is mainly 1880 to 1910. The moulded wheat pattern on white earthenware plate 1T2G2-8 was popular in the late 19th century and the sprig and band design on porcelain saucer 1T2G3-1380X was common in the late 19th and early 20th centuries. The coarse Oriental stoneware is post-1870 and the coarse Western stoneware is typically post-1850. Some of the ceramic articles, especially those from Japan, may date from the mid-20th century, but the majority seem to have been used and broken in the late 19th and early 20th centuries, from about 1880 to 1910.

Evidently the Nootkans experienced a rush and subsequent decrease in the quantity of ceramics they used at Yuquot. The history of the village reveals four relevant inter-related trends: 1. availability of wage employment for men beginning in the 1880s and in the 1890s or 1900s employment in canneries for the women; 2. strong Euro-Canadian accultural influences on community life beginning in the 1880s, especially through missionaries; 3. local supply of consumer goods by the 1880s, improved by the completion of the Canadian Pacific Railway in 1885; and 4. decline of the population through disease and movement to white settlements so that by the late 1920s and until the early 1940s Yuquot was virtually deserted.

The forms of the ceramics can also cast some light on social trends at the time. Excluding the 86 objects too fragmentary to be identified regarding form, 95.8% of the Nootkan reoccupation ceramics, or 316 objects, were of forms used in the storage, preparation, or consumption of food and drink. Only 4.2%, or 14 of the objects, were not normally used for food, and of these the washbasin might well have been used by the Nootkans as a serving bowl and the doll's tableware had a symbolic link with food. No evidence of artifact re-use or use in cooking was found. These facts might not be remarkably different from what one might find from a Euro-Canadian site of the same era, but the breakdown of forms of the Yuquot objects presents a different and singular aspect (see Appendix A for a tabular comparison).

Small bowls made up the single largest functional group in the ceramics, namely 28% of the identifiable forms and at least 22% of all objects in the reoccupation component. This class was followed closely by cups and, to a lesser extent, saucers, plates, large bowls, and small plates. Kitchen crockery, washbasins, and ornaments were poorly represented. One possible spitoon and one possible small jug were noted, but the following were not identified at all: egg-cup, butter crock, pitcher, teapot, coffee pot, creamer, sugar bowl, ewer, soap dish, shaving mug, chamber pot, slop jar, flush toilet, floor or wall tile, porcelain sink, vase or flower pot (bricks are discussed in the report on Yuquot metal and miscellaneous artifacts). Perhaps the foods or cultural behaviour associated with most of these were still alien to the Nootkans.

Traditionally the Nootkans ate mostly seafood which they commonly cooked by boiling in wooden boxes. The water was heated by the immersion of hot stones. The various courses were served in wooden trenchers, even small canoes, from which people could pick the food with their fingers. At feasts about three people would eat together and at home the whole family would eat from the same vessel. Water and oil were drunk from wooden cups. Sometimes large sea shells were used to scoop up soupy preparations.

Thus it might be argued that the Nootkan reoccupation component reflects some transition in the domestic and social lives of the Nootkans. European goods quickly replaced native forms, but European culture was altering rather than supplanting native culture. The small bowls for which the Nootkans seem to have displayed a distinct preference are suitable only for individual use unless they were used as cups and they do not precisely fit the indigenous pattern. However, they would be preferable to plates for the oily and mushy foods traditionally eaten. Possibly the familiar foods were being distributed to each person from the cooking vessel, often an iron pot by the late 19th century, rather than transferred to a common eating container. The advent of the single-family dwelling, the disappearance of the multi-family plank houses, and the suppression of ritual feasting probably accompanied the adoption of some white practices in the very serving and consumption of meals.

The question of exactly how and why the Nootkans acquired these ceramics cannot be properly answered, unfortunately, without better historical documentation. All the writer knows at the moment is that a store was in the area by the 1880s, steamers were regularly plying the coast by the same time, indigenous trade and potlatch networks were well-developed and far-reaching, and the sea-going Nootkans were themselves highly mobile. The limitations of selection and price of the ceramics were probably the main factors controlling the Nootkans' choices. Pottery was not an indigenous medium, it was never adopted by the Nootkans, nor were floral themes normal for Northwest Coast artists so there may well have been no established notions of what was attractive or prestigious. The Chinese stoneware and porcelain were probably brought to the area by and/or for Chinese labourers working in the fish processing industry; a fish cannery or saltry was established on Nootka Sound in 1895. The NG KA PY liquor bottles may have been used by the Nootkans, but as the Nootkans generally liked neither the Chinese nor spicy foods, the ginger jars are unexpected.

Comparison of the Yuquot historical ceramic component with that of other Northwest Coast sites is difficult, largely because in 1966 Yuquot was one of the first major excavations on the Northwest Coast. The nearest group of contact sites about which information has been published and that seem relevant are in southwestern and southeastern Alaska. The history of these sites often parallels that of Yuquot. There was ready employment for men and women in the fishing industry beginning in the 1880s, communities declined dramatically in the 1890s through disease and movement to towns and cannery sites, and Chinese labour was imported to work in the canneries. Several Inuit (Oswalt and VanStone 1967; VanStone 1968, 1970) and Indian (Ackerman 1965, 1968; VanStone and Townsend 1970) sites have yielded ceramics similar to those from Yuquot. They consist mainly of late 19th-century refined white earthenware, usually referred to by the authors as "ironstone", most of which is transfer printed though some is stamped, hand-painted, and blue-and-white banded. The great bulk was from Staffordshire, but two items from Knowles, Taylor, & Knowles of Ohio were recovered (Ackerman 1965: 27; VanStone and Townsend 1970: 54). One site in Glacier Bay in the Alaskan Panhandle also had two NG KA PY bottles and a ginger jar (Ackerman 1965: 27, 28, fig. 16, No. 2, No. 3).

Interesting with respect to Yuquot, VanStone and Townsend (1970: 84) note that at Kijik, an Athapaskan Indian village near Anchorage, "The Kijik Indians seem to have had little need for plates but found cups and saucers extremely useful." They later conclude that "about the best we can say, therefore, is that apparently it was the influx of trade goods during the early American period and probably after 1875-80 that practically obliterated almost everything that was distinctively Athapaskan about the material culture of the Indians at Kijik" (1970: 160). In contrast, the local Inuit tended to maintain more of their material culture tradition.

Our evolving picture of the Northwest Coast in the late 19th century as seen through ceramics thus seems to emphasize the economic impact of the fisheries, a good supply of the popular wares of the day, and a sharp decline in native populations by the early 20th century. In spite of the relative isolation of sites such as Yuquot, there was a rapid influx of European material culture. This bespeaks an at least tacit acceptance of labour specialization, participation in a far-flung market economy, and an abandonment of community self-sufficiency, although certainly the peoples of the Northwest Coast were no strangers to trade or local or individual economic specialization before the appearance of the white man.

APPENDIX A. FORM AND WARE SUMMARY OF NOOTKAN REOCCUPATION CERAMICS

Appendix A. Summary of Nootkan Reoccupation Ceramics

	Cups	Saucers	Small plates	Plates	Bowls	Large bowls	Wash-basins	Jars & jugs	Bottles	Other	Unknown	Total
Creamware & pearlware											7	7
Refined white earthenware (total=285 or 68%)												
Moulded	2		1	2							2	7
Transfer-printed	24	11	1	14	2		1				26	79
Stamped	16	6	1	7	14	3					13	60
Hand-painted	3	2			1	2						8
Banded	3	3	1		53	1						61
Gilded and enamelled	4			1								5
Undecorated or none left	19	19	2	8	10	5					2	65
Coarse & soft earthenware					1					1	8	10
Banded ware					2	2		1			6	11
Western stoneware	1							6	8			15
Oriental stoneware						1		5	4		2	12
Oriental porcelain	2	2		1	6			1			5	17
Western porcelain & bone china	11	16	1	1	2	1				12	15	59
Total	85	59	7	36	91	15	1	13	12	13	86	416

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Mexican Sherds Recovered from the Archaeological Excavations at Yuquot, British Columbia

Phil Weigand, Sue Ward, and Garman Harbottle

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Abstract

The excavations at Yuquot, British Columbia, produced sherds from a kitchen that was assembled from various localities in Mexico. These sherds were analyzed by neutron activation, spectrography, and style. Because of limited soil/clay profiles for archaeological and colonial ceramics from Mexico, stylistic observations are the most conclusive.

Submitted for publication 1973, by Phil Weigand, State University of New York at Stony Brook, Stony Brook, New York; Sue Ward, Southern Illinois University Museum, Carbondale, Illinois; and Garman Harbottle, Brookhaven National Laboratory, Upton, New York.

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The Mexican Sherds

The Mexican sherds recovered during National Historic Parks and Sites Branch archaeological investigations, under the direction of W.J. Folan, at Yuquot, British Columbia, were analyzed in three ways: by style, spectography, and neutron activation. That the results of these analyses were not totally definitive is a reflection of the lack of systematic studies of Mexican colonial wares as well as poorly understood clay-source profiles throughout Mexico; however, the results are detailed enough, in terms of the geological and chemical composition of the sherds, to allow further and more definite analysis when more data concerning clay-source profiles and the character of colonial wares are available. Proveniences for the sherds, therefore, are based on stylistic resemblances to known colonial and contemporary ceramic traditions.

Overall Characteristics Based on Spectographic Analysis

The most common factor is the presence of minute particles of devitrified glass which is a component of *liga*-type clays common to the lake valley deposits of West Mexico, especially Jalisco. These clays seem to be bentonites which are partly formed by the decomposition of volcanic ash. Glass pieces are common in volcanic ash. More specifically, devitrified glass was present in varying quantities though 1T2C6-570 and 1T2G4A-47 did not have any glass in their pastes.

Sherds 1T1G6-1809X, 1T3C7-379, 1T1O2-65, and 1T2G4A-47 had large quantities of small quartz and plagioclase pieces in their pastes. This is also a characteristic of the lake deposits of western Mexico. Five other sherds (1T3C5-356, 1T2C6-570, 1T1A3-197, 1T3A2-105X, and 1T1C4-191) have small quantities of quartz and plagioclase in their pastes. 1T1O2-65 and 1T7O40-2 did not have any quartz or plagioclase.

All sherds had large pieces of temper except 1T2R2-80 which had only a few small pieces of temper. Temper consisted of rock fragments (many with quartz inclusions), quartz, and plagioclase. 1T3A2-105X has some sherd temper and the component sherd had been partly tempered with obsidian, which is quite different from the devitrified glass.

Pyroxene and amphibole are present in small quantities and small pieces in 1T1G6-1809X, 1T3C5-356, 1T3C7-379, and 1T2G4A-47. Hematite is present in 1T1G6-1809X, 1T3C5-356, 1T2C6-570, 1T3C7-379, 1T1A3-197, 1T3A2-105X, and 1T1O2-65. Illmenite with leucoxene is found in 1T1G6-1809X, 1T3C5-356, and 1T2C6-570.

Based on the spectographic analysis, it appears that most vessels were made from *liga*-type clays (Weigand 1971) common to the lake deposits of highland West Mexico. Highly unweathered clays and/or sands were used as tempers and the tempering result was rather crude. The remaining possible colonial Mexican sherds were not spectographically tested.

Neutron Activation Analysis

Only those sherds analyzed spectographically were analyzed by activation. Activation was short-term bombardment to test for the following trace elements: sodium, potassium, lanthanum, and manganese. The results of the short bombardment appear in Table 1. Compare these profiles with those in Table 2, which represent *liga* and *barro* profiles from San Isidro, Jalisco, a lake deposit used by colonial and contemporary potters, and thus far the only West Mexican lake-deposit clay samples to be tested by neutron activation. The comparative results indicate that the San Isidro clay beds, and hence the Madgalena-Etzatlán basin, did not serve as a point of origin for the Yuquot wares, though related deposits, obviously in other nearby valleys or river systems, seem to be suggested. Euclidean distances between sherd samples suggest that the following sherds closely cluster: 1T1G6-1809X, 1T3C5-356, 1T2C6-570 and 1T3C7-379. Since 1T2C6-570 is from a restorable *cazuela*, 1T3C5-356 and 1T1G6-1809X probably also belong to that pot. The restorable soup plate, represented by 1T3C7-379, is so close in Euclidean distance as to suggest it was made at the same locale as the *cazuela* (1T2C6-570, etc.). No other sherds cluster, in terms of Euclidean distance, with the aforementioned group nor among themselves, strongly suggesting that many diverse points of origin for their component clays and manufacture are involved for those sherds tested by neutron activation.

Stylistic Analysis

Traditional ceramics in West Mexico today, and indeed many of their colonial antecedents, are made by a complicated technique involving moulds, wheels, and coils all for the same vessel (Weigand 1971). For *ollas*, for example, bases are moulded, the walls are thrown, and the top one-third to one-fourth, including the rim, is coiled though the coils are wheel-controlled. Soup plates are moulded and annular base rims are added as coils. *Jarros* are moulded and thrown. *Cantaros* are made by the same technique as *ollas*. Where evidence of technique is discernible, most of the Yuquot colonial sherds suggest this same complex type of cottage industry technical tradition.

The individual sherd style analyses follow.

1. 1T2G4A-47 and 1T2R2-80 were sectioned and activated. The sherds are visually similar, but activation shows them to be from different vessels as well as probably different areas of manufacture. The glazes are green and the exteriors are blackened, suggesting that these are *olla*-cooking pot sherds. The thick bodies suggest large vessels.

Table 1. Spanish-Occupation Sherds from Yuquot

Sherd Number	Percentage of Sodium	Percentage of Potassium	Parts per Million: Lanthanum	Parts per Million: Manganese
1T1G6-1809X	1.04	.50	30.12	650.24
1T3C5-356	1.19	.63	36.43	712.97
1T2C6-570	.99	.45	29.71	830.85
1T3C7-379	.85	.37	27.56	660.30
1T1A3-197	.40	.10	78.27	232.75
1T3A2-105X	.28	.51	138.13	273.19
1T1Q2-65	.46	.80	99.74	261.94
1T2R2-80	.24	.47	123.36	156.72
1T2G4A-47	.55	2.39	36.35	641.40
1T1C4-191	1.34	.47	18.53	536.89
1T7Q40-2	1.01	.35	31.76	327.96

Table 2. San Isidro Clays

Sample Description	Percentage of Sodium	Percentage of Potassium	Parts per Million: Lanthanum	Parts per Million: Manganese
liga				
1st deposit	1.29	1.74	59.17	275.59
2nd deposit	1.29	1.75	69.12	290.84
ligaptinta blanca				
1st deposit	.78	1.60	372.90	80.91
2nd deposit	.70	1.56	332.56	65.41
barro				
1st deposit	1.22	1.54	45.39	587.97
2nd deposit	1.10	1.77	55.82	303.46

Green-glazed ceramics are often regarded as markers of Michoacan traditions though they were also made in several areas of Jalisco, for example in the middle Bolaños valley. Related *olla* sherds (unsectioned and not activated) in the Yuquot collection are 1T2R2-128, 1T1S2-83, and 1T2R2-153X. 1T2F5-1760, though from a thick, large *cazuela*, may belong to this category.

2. 1T2C4-191 is slipped orange with a clear glaze. It appears to be from large *olla*. A related sherd (unsectioned and not activated) is 1T2G40-1604X. This type of ceramic is almost pan-Mexican during both colonial and contemporary periods and was (and is) popular in West Mexico.

3. 1T3C7-379 is a restorable annular ring-based soup plate; red slip on orange and a clear glaze. The ticked floral motif is characteristic of ceramics from the Guadalajara area, very possibly the San Pedro Tlaquepaque region. The restorable *cazuela* (1T2C6-570, 1T3C5-356, and 1T1G6-1809X plus other attached sherds not sent to us for analysis) is from this same region. It is a cooking vessel as sooty areas mark its exterior. A thick clear glaze accents the natural orange-tan clay.

4. 1T1A3-197 is from a red-on-tan, glazed soup plate. The design probably was ticked floral motifs. Visually, the plate resembles the Tlaquepaque ceramics, but the Euclidean distances based on activation are too great. Many other ceramic-producing centres existed close to Tlaquepaque in colonial times (and today, Díaz 1966) and it is possible that this plate could be from nearby. Spectographic analysis indicates a relative closeness to the Guadalajara area sherds.

5. 1T3A2-105X, from a thin serving *cazuela*, has an orange background with spots turned green due to the high kiln firing temperature. Stylistically, the vessel is pan-Mexican and certainly could have been made in western Mexico, including perhaps the general Guadalajara or Zapotlan el Grande areas.

6. 1T1Q2-65 is from a thick, polished vessel, glazed whitish to yellow inside, plain outside, that may have been a soup plate. A black line decorates the rim edge. No manufacturing provenience can be suggested though stylistically it fits within the overall range of colonial Mexican ceramics.

7. 1T7Q40-2 is a rimsherd from a crude, unglazed, high-necked *cantaro*. The purple to reddish paint is distinctive and it is possible that this is a Mesoamerican Indian vessel. Purple painted waves were part of the aboriginal Aztec ceramic series and have been found in archaeological deposits as early as A.D. 950 in West Mexico.

8. 1T1Q2-82 seems to be from a small, thin-walled *cazuela* that had occasionally been used for cooking (as the exterior walls are blackened). It is tan and glazed on the interior and the vessel's bottom was painted white. No manufacturing provenience is suggested though it is within the range of generalized West Mexican colonial ceramic types.

9. 1T1S1-48 is from a black-on-white soup plate. The surface, while polished, was not glazed. The interior decoration suggests floral motifs. No provenience is suggested.

10. 1T1W1-5 and 1T1Q2-65 are sherds from a *jarro* (or *taza*) and possible soup plate, respectively. Both have black painted rim edge lines. It is possible that these sherds represent vessels from Central Mexico, perhaps Puebla.

Conclusions

While many of the sherds cannot be placed in terms of manufacturing provenience, some definitely suggest West Mexican manufacture, especially the generalized Guadalajara area and the lake zones near that centre. If the Spanish expedition to establish a post at Yuquot was launched from San Blás-Matanchel, this zone is a most logical provisioning and staging area. In addition, in colonial and contemporary periods this zone exports large quantities of ceramics to the coastal regions of West Mexico (Weigand 1971).

The sherds also suggest that at least a minimal kitchen was imported to the Spanish settlement at Yuquot, as the basic categories of a kitchen (cooking, storage, serving, and table vessels) are all represented. The kitchen, though, does not seem to have been one that was systematically put together, but rather one that was composed of odds and ends from many different manufacturing localities, perhaps acquired from the kitchens of different supply ships as well as the original garrison's ship. No prestige or high-status-marking vessels are in evidence with the possible exception of the *jarro* or soup plate sherds described in number 10 above and the emphasis was almost entirely utilitarian from those sherds submitted to us for analysis.

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